NEW RATE OF MORTALITY,

ANNUITIES AND ASSURANCES,

&c. &c. &c.

E & F.N.SPON,
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SERIES OF TABLES

OF

ANNUITIES AND ASSURANCES

CALCULATED FROM

A

NEW RATE OF MORTALITY

AMONGST

ASSURED LIVES:

WITH

EXAMPLES

ILLUSTRATIVE OF THEIR CONSTRUCTION AND APPLICATION,

&c. &c. &c.

BY

JENKIN JONES,

ACTUARY TO THE NATIONAL MERCANTILE LIFE ASSURANCE SOCIETY.

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PREFACE.

THE object of the present publication, and an explanation of the data, from which the Tables have been computed, are set forth in the "Introduction."

It was originally the Author's intention simply to publish a few Tables, with practical examples, illustrative of their application; but, in working out the examples, it occurred to him that it would not be unacceptable to those who take an interest in the subject, but who are not familiar with the theory of Annuities and Assurances, if he were also to explain, without using any Algebraic symbols, the principles upon which the Tables were constructed. This he has endeavoured to accomplish.

To those persons, therefore, who are acquainted with decimal arithmetic, the author thinks that they would find in the "Examples" an "Elementary Treatise" on Annuities and Assurances, which would be of considerable service to them by way of preparation for the study of the larger and more comprehensive treatises by Milne, Bailey, and D. Jones.

The whole of the computations made from the "New Rate of Mortality," have been carefully calculated by two separate computers.

In the construction of some of the Tables, the

Author is indebted to Mr. Joseph J. Cleghorn, the efficient Deputy to Mr. Griffith Davies, the Actuary of the Guardian Assurance Company, who had previously computed them for the use of his own office, and which, upon comparison, were found to agree in every respect with those computed by the Author.

The Author is also indebted to Mr. Griffith Davies' step-son, Mr. Evan Owen Glynne of the Legal and General Life Office, whose services he was fortunate enough to obtain, and by whom the greater portion of the calculations were made in Duplicate with the Author.

The Legal Decisions were compiled by the Author's friend, Mr. Hugh Owen, of the Poor Law Commission Office.

The Author had intended to print, by way of Appendix, a Popular Exposition of the Principles of Assurance, with observations upon the various "advantages" held out by the several Life Offices, and a comparison of their rates of premium, &c., but it has been suggested to him that it would be desirable to make a separate, and a *very cheap* publication of it, which the author purposes doing at a future opportunity.

National Mercantile
Life Assurance Society,
December 21, 1843.

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INTRODUCTION.

The institution of Life Assurance Societies is generally admitted to be one of the most important and benevolent features in modern civilization: and it must be gratifying to all who take an interest in the welfare of society and in the happiness of their species, to observe the great increase which has taken place in the number of these institutions so far as that fact may be taken as an indication of the increase in the numbers who have availed themselves of their advantages. The great danger, however, is that by over competition parties may be (as some have been) induced to charge premiums which are too low to cover the risks incurred, and thus be productive of the very mischief which it is ostensibly their object to prevent.

The great importance of the subject will be manifest when it is considered that thousands of persons are annually investing a large portion of their income to provide subsistence for their families, in the

event of their own premature death, and that a very large portion of the property of the country is dependent upon the tenure of human life, so that the welfare and future happiness of a large part of the community are entirely dependent upon the solvency of these institutions. It is therefore of the first importance that the tables of rates should be calculated from the most recent and most extensive experience that can be obtained; so that, on the one hand, they should not be exorbitant; yet, on the other, that they should be *fully adequate* to cover the risks, and to meet all the liabilities incurred.

To determine the premiums, single or periodical, which ought to be charged for any description of assurance, it is first necessary to construct a table of mortality—that is, a table exhibiting out of a certain number born or who complete a given age, say 100,000, the number who die in each year of age, from birth, or the given age to the extreme of life. It is by means of such a table, combined with the interest of money, that the premiums charged by Life Offices are determined.

The earlier societies, such as the Amicable, and Royal Exchange, which were established in the 17th century, it appears, charged a premium of £5 per cent., on all lives assured *without reference to age*; but it is needless to add that they have since adopted proportionate rates for the risk of each age; and in the absence of better materials the premiums charged by the Equitable Life Office were deduced

from the probabilities of life in London during a period of 20 years, which included the year 1740, when the mortality was considered to be almost equal to that of a plague. These premiums, however, were not deemed by the then Attorney-General to be sufficiently high, and the Crown, in consequence of his recommendation, refused to issue a charter, which naturally retarded very materially the progress of the society.

In the year 1776, however, the premiums were reduced 1-10th, and in 1780, Dr. Price's Northampton Table was adopted as the basis upon which a fresh set of rates was calculated, to which 15 per cent. was added for further security. This, however, was taken off in 1785, and the premiums from that date to the present have remained unaltered.

The Northampton Table was formed by Dr. Price from bills of the mortality during the years 1735 to 1780, in the parish of All Saints, Northampton, which contained little more than half the population of that town, and on the supposition of a stationary population, whereas the population was then increasing. It is manifest that a rate of mortality so obtained and deduced from the experience of one parish could not be taken as an index of the mortality throughout the kingdom, which contains upwards of 12,000 parishes. This, however, is the table used by the majority of the old Life Offices, and by some of the new, although it has apparently been proved, at least by the experience

of the Equitable, to represent the mortality much too high, especially at the younger and middle ages.

This will be seen by the following table extracted from Mr. Morgan's "View of the rise and progress of the Equitable Society," which shews the number who died in the 12 years preceding 1829, out of a certain number of assurances in force, and contrasts that number with the number that they had reason, according to the Northampton rate to expect to have died in that period.

Age.	No.	Died.	Should have died.
20 to 30	4720	29	68
30 " 40	15951	106	243
40 " 50	27072	201	506
50 " 60	23307	339	545
60 " 70	14705	426	502
70 " 80	5056	289	290
80 " 95	701	99	94

Various other tables of mortality have been constructed since the Northampton: of those of most note the first is the Swedish, which was constructed from returns collected in the years from 1755 to 1776, inclusively, and which contained the whole population of Sweden and Finland. This Table has been since corrected from more recent data. The next is a table by Mons. De Parcieux exhibiting the mortality amongst the nominees of the French Tontine. The more recent tables, and those now generally used are the Carlisle and Equitable rates of mor-

tality. The Carlisle was framed by Mr. Milne, from observations made by Dr Heysham, of the mortality in that town during the years 1779-1787, upon a population of 8,000 persons. The "Equitable" was framed by Mr. Griffith Davies, from the decrements of life among the members at the Equitable, and subsequently by Mr. Morgan, from more complete data, so that Mr. Davies' table can now only be considered as a graduated Carlisle.

The Carlisle table agrees very closely with the Equitable, but independently of the objection to a table based upon so few observations, it will be found, notwithstanding its close agreement with the Equitable experience, that for the want of a greater number of observations at each age, and the table not being graduated, but confined strictly to the data afforded at each age, the Carlisle is impracticable as a basis for temporary assurances, for, on account of the irregularities in the probabilities of dying in one year at several of the ages, the premiums deduced therefrom would, in some instances, be greater for young lives than for old ones. For example—at 45 the premium to assure £1000 for one year would be £14 8*s.* 0*d.*, and at 50 it would be £13 0*s.* 0*d.* The irregularities in the probabilities would also affect survivorship assurances, as the probability of surviving one year is an important element in the calculation of those contingencies.

Mr. Milne states that the Carlisle table differs very little from the general law that obtains throughout

the country, taking town and country together. But supposing the Carlisle, or any other table, to represent accurately the mortality of the united kingdom, such a rate ought only to be used in the absence of the actual experience of the mortality amongst assured lives, for offices do not take lives indiscriminately, but have the power of selection. Now if an office is prudently conducted, all doubtful lives are rejected; and if it were possible to select *all* good lives such a table as the Carlisle would manifestly represent a mortality higher than that which would prevail amongst the lives actually assured. As there is also greater laxity in the selection of lives in some offices than in others, and as it will happen, even with the utmost vigilance exercised, that some unsound lives will be passed as eligible, it is manifest that a rate of mortality, deduced from the combined experience of the various Life Offices, is the most consistent, and the safest basis upon which the rates of assurance ought to be determined.

Mr. Griffith Davies, the able and experienced Actuary of the Guardian Life Office, in his observations upon the data afforded by the Equitable observes,—"It must be allowed that however doubtful the limited experience of a new institution might be regarded, the proportions stated by Mr. Morgan, repeated and confirmed as they have been for a period exceeding half a century, afford more satisfactory data for determining the *rate of mortality among assured lives,* than any registers hitherto made public."

Mr. Babbage, in his "Comparative view of the various Institutions for the Assurance of Lives," says, in reference to the best data for constructing a rate of mortality, that "It is, therefore, to be expected that the law of mortality which exists amongst assurers, should approach more nearly to that which takes place amongst select classes of mankind, such as amongst annuitants, (where it is the interest of each proprietor to select a good life) than to more indiscriminate bodies of people. Although there exist good observations of this kind, I am not aware of their having been employed as the basis of any table of premiums for assurances."

"Having now pointed out the defects of the tables in general use, it will naturally be inquired what others it is proposed to substitute. To this it may be answered, that the best substitution would be a table actually constructed from the deaths occurring amongst a large body of persons of this very class whose law of mortality we wish to ascertain. Materials for such a table exist, and probably in the best and most authentic form. The Equitable Society has been established sixty years, and it must possess records of the death, and cause of death, of all those who have had claims on its funds. Another society of considerable extent, the Amicable, has existed above a century, a vast quantity of valuable materials is, without doubt, contained in the records of these two societies, and if they were each to communicate to the public the facts of which they

The following circular, which was transmitted with a supply of forms to each of the contributing offices, will explain the particulars that were obtained from them :—

1, *King William Street, City,*
25th September, 1838.

Sir,

"The Committee of Actuaries desire me, in forwarding the accompanying forms, which they have prepared for collecting the data, on which to found the experience of Assured Lives generally, to submit the following explanation of the nine columns into which the forms are divided.

"Column 1.—Headed 'For use of Office,' is intended for the number of the policy, or any other distinguishing mark, by which the person employed to make the extract from the Policy Register, may note how far he has proceeded, and be enabled to resume the operation without difficulty.

"Column 2.—Headed 'Current Age at Entry' is intended to contain the age next birth day of the party Assured, at the time the Assurance was effected.

"Column 3.—Headed 'Year of Entry' is for the Year in which the Assurance was effected. The Committee require neither the month, nor the day of the month. The same observation applies to column 4, headed 'Year of Exit.' No distinguishing mark is required to show whether a Policy has become extinct by forfeiture, purchase, or expiration of term; but when extinguished by death, a D must be inserted in the next column, No. 5. The column marked 'Exit' will be left blank, opposite all those Policies which were in force on the 31st December, 1837, to which date it is requested that the list be made up, if convenient.

"The next column is for distinguishing the sex, in which is to be put an F opposite all Policies on the lives of Females; the blanks will indicate Males. Such Offices as have Agents are requested to insert a T opposite those Policies effected in Town;

a C opposite to those Policies effected in the Country, and an I opposite those effected in Ireland, in the column marked 'Distinction into Town, Country, and Irish.'

"The cause of death is to be inserted in the next column, in a line with those Policies extinguished by death.

"The last column is intended for a notice of special or foreign risks, and for the insertion of any observation that may be considered useful.

"The question of founding the experience from returns of Policies issued, or on Lives Assured, was fully discussed by the Committee,—to confine the returns to a list of the Lives Assured in each Office might at first appear desirable, as a means of avoiding the insertion of the same Life more than once, in cases where more than one Policy has been granted thereon; but when it was considered that in combining the returns of several Offices, it would be impossible to prevent the repetition of the same life, as many are assured in several Offices, and that, in combining large numbers where Lives represented by duplicate Policies, are subject to the same ratio of mortality as those represented by single Policies, the result cannot be sensibly affected by the duplication, it was determined by the Committee to confine the lists to a record of *Policies issued on single Lives*."

I have &c.

Robert Christie, Hon. Sec.

From the returns received from the several offices in the prescribed form, and which were blended together as they came in, "so as to prevent any use being made of the returns separately," various tables have been prepared, and great care appears to have been exercised in the classification of the data, upon which the results in the tables have been obtained.

The following is a list of the several tables,* prepared by the committee.

Table A (1-6)—Shewing out of the number of Assurances effected in each current year of age, the respective numbers in each year of duration, cancelled by discontinuance and by death, and existing at the termination of the observations. (Separate tables for Male and Female lives, Town, Country, and Irish respectively.)

Table B (1-6)—Being an enumeration of entries, existences, discontinuances, and deaths, in each year of age, deduced from the foregoing tables, A (1-6) (separate tables for Town, Country, and Irish Male and Female lives respectively.)

Table C.—Shewing the number exposed to the risk of mortality, the actual number of deaths for Assurances on the lives of Males and Females, separately and collectively, and for Town, Country, and Irish Assurances separately, deduced from Tables B and the computed number of deaths, according to the Northampton, Carlisle, and Mr. Davies's Equitable Tables of mortality, in decennial periods of age, calculated to the nearest whole number.

Table D. (1-5)—Shewing the number exposed to the risk of mortality, and the deaths in each year, with the probability of surviving one year, and the expectation or average duration of life; deduced from Tables B (1-6) (for Town, Country, and Irish Male and Female Lives separately, and for Town, Country, and Irish experience separately.)

Table E.—Shewing four times the number exposed to the risk of mortality, and four times the number of deaths in each year, with the probability of surviving one year, and the expectation or average duration of life, deduced from Tables B (1) B (4) and other Town experience, which together comprise 48,702 Assurances.

Table F.—Shewing four times the number exposed to the risk

* These Tables are not published, and are only in the possession of the several Life Offices who subscribed for copies.

of mortality, and four times the number of deaths in each year with the probability of surviving one year, and the expectation or average duration of life; deduced from the total experience, which comprises 83,905 Assurances.

*Table G.**—Adjusted law of mortality, according to the combined Town and Country experience, deduced from Tables D, (4) and E, which comprise 62,537 assurances.

Equitable experience for separate classes.

Table H (1)—Shewing results on 7,259 lives admitted between the ages of 25 and 35 years.

Table H (2)—Shewing results on 6,270 lives admitted between the ages of 35 and 45 years.

Table H (3)—Shewing results on 3,436 lives admitted between the ages of 45 and 55 years.

Table H (4)—Shewing results on 1,317 lives admitted between the ages of 55 and 65 years.

Table I (1)†—Shewing the expectation or average duration of life; deduced from eight original Tables, and compared with the Northampton and Carlisle Tables.

Table I (2)—Shewing the expectation or average duration of life, for persons admitted at particular ages in the Equitable Society, and compared with Mr. Morgan's and Mr Davies's Tables of that Society's total experience.

Table K.—Shewing the mortality per cent. in each year of age; deduced from twelve original Tables.

Table L.—Shewing the annual number of deaths in quinquennial periods of age, out of 10,000 persons living at each age according to various Tables of mortality.

It appears to have been originally the intention of the Committee "to put the various offices, and those who might be interested in carrying out such investigations, in possession of what appeared to be the most useful and valuable classifications of the bare

* See Tables 5, 6, and 7. † See Table 8.

facts comprised in the different returns, without the introduction of any arbitrary or theoretical adjustments. However, as some persons might be desirous to see an adjusted table of mortality, one has been deduced from the combined Town united with the Country Assurances, which comprise the whole of the male and female lives that admit of being separated from the Irish."

It would have been interesting to have had a classification of the causes of death amongst assured lives, but it appears that " the returns of the causes of death were deficient in so many of the lists that it was not considered desirable to make any classification of them."

The Author has examined the whole of the Tables with great care and with much interest, but prefers setting forth the peculiar features exhibited by them in the language of the Committee in whose praise too much cannot be said for the valuable time and trouble which they have gratuitously given to this important and interesting subject.

The Committee state that the most striking features exhibited in these Tables, are the great mortality that prevails among Irish lives, and the marked difference in the rate of mortality between males and females. The near agreement with each other of the Tables for " Town " and " Country " Assurances is also very remarkable, considering that no adjustment has been employed.

On comparing the results given in tables C and

L, the mortality annually, taking all ages together, is shown to be least amongst "Town" Assurances, rather more amongst "Country," and greatest amongst "Irish" Assurances. The mortality amongst assured females, taking all ages together, is also greater than amongst assured males; and both these classes exhibit a greater rate of mortality than either "Town" or "Country" Assurances, which arises from the Irish Assurances being included amongst the males and females.

The mortality represented in table C, is considerably greater for females than males, between the ages of 20 and 50, from 50 to 70 years of age it is less, and after the latter age it is at some periods rather greater, but the numbers are too small to be of any import at these advanced periods of life. The "Irish" Assurances are subject to rather less mortality under 60 years of age than is represented by the Northampton Table; but after that age the mortality amongst them is greater: and taking all ages together, the deaths are more than 95 per cent. of what might be expected by that table.

On making a comparison of the different classes according to the expectations of life, as shewn in Table I, it will be seen that the average duration of male lives, under 36 years of age, is greater than that of females, and from 36 to 61 years of age, the average duration of the lives of females is greater than that of males, but after the age of 61, the expectation is greater for males than females, which

may arise from the paucity of numbers at the advanced periods of life. The expectation of life for the class designated "Town" (deduced from the facts contained in Table A), will be found to agree very nearly with Mr. Morgan's Equitable Table E, being a little more, but scarcely differing one with another a quarter of a year from 22 to 63 years, after the latter age the expectation of life is sometimes a little more and sometimes less than by Mr. Morgan's Table, but on the whole exhibiting a close agreement. The "Irish" class gives a considerably less expectation of life than Mr. Morgan's Table at all ages; and after the age of 44, the expectation is even less than by the Northampton Table. The class designated "Combined Town" in which the "Equitable" and "Amicable" total experiences are combined with the other "Town" Assurances, will be found to give the expectation of life rather less than the latter, arising doubtlessly from the assurances in the two offices just named being of longer duration than those in most of the other offices. The expectation of life, deduced from the whole of the materials put together, it will be seen differs very little from the "Combined Town," The four classes "Town," "Country," "Combined Town," and "General," will be found to agree very closely with the expectations of life deduced from Mr. Milne's Carlisle Table of Mortality, although generally giving a lower expectation than that Table."

In reference to the materials from which the

whole of the Tables have been formed, the Committee state that they represent a lower rate of mortality than can be expected to prevail in a longer period of time than that over which the present observations extend; for the average duration of Policies embraced in nearly one-half of the experience is under $5\frac{1}{2}$ years; and taking the whole of the experience together, which includes that of the "Equitable" and "Amicable," the two oldest offices existing, the average duration of all the Policies is not $8\frac{1}{2}$ years. This is readily accounted for when it is seen that more than half the Policies effected were existing at the termination of the observations, and nearly a third had been discontinued during the life time of the parties assured. The circumstance of recent selection should not be lost sight of by such persons as may use these Tables either for the sake of comparison or as the basis of other tables for granting assurances. The difference in the rate of mortality between recently selected lives and those of longer continuance in the society is clearly shewn by Mr. Galloway in the tables of mortality deduced by him from the experience of the "Amicable Society," and which that society, like the "Equitable," has recently so disinterestedly printed for the use of its members."

It has been thought right to enter thus fully into the origin of the publication of the Tables, prepared under the superintendence of the Committee of

Actuaries, and to set forth their opinion of the results obtained by them, as it is of the utmost importance that the public should be made acquainted with the fact that such a committee has been formed, and have availed themselves of the most extensive and special experience that could be obtained to determine the law of mortality which prevails amongst assured lives, and have thus enabled every existing office to test the adequacy of its rate of premiums, and future offices to provide a rate for themselves on a secure basis.

A rate of mortality having been determined, the next important point for consideration is the rate of interest which must be assumed, as that which the funds invested by a Life Office will realize. Those offices which have started at considerably "lower premiums than any other office," justify the reduction in their rates on the ground of the mortality not being so great as that represented by the tables of mortality used generally by the offices, and also that they can realize a larger per centage on the monies invested, than that on which the rates are generally based. The mortality deduced from the combined experience of the various Life Offices will set all speculations at rest as to the rate of mortality which may be expected to prevail amongst assured lives. With respect to "Interest," it will be admitted, at least, that it is liable to great fluctuation, and that money has been for a series of years gradually lessening in value. Mr. De Morgan

observes, in reference to this point, advanced by the advocates for low premiums. "The rate of interest has been halved within the memory of man, and a heavy war might double it again. That same war with all its casualties, direct and indirect included, would not alter the mortality of the country by any serious amount. I consider it then as next to certain, that the insurance offices have more to look for, whether as matter of hope or fear, from the fluctuations of the rate of interest, than from those of mortality." * * * * * *

"We are already in a very different position as to the rate of interest which has been gradually falling since the war. * * * Assuming the necessity of calculating upon a rate of interest something less than that which can actually be attained, I should think that no office would be justified in supposing more than 3 per cent., *with tables which are sufficiently high to come any ways near to the actual experience of mortality*. With regard to one point, and that of fundamental importance, namely, the possibility of a still further fall in the rate of interest, it may even be doubted whether, *with such tables*, a still lower rate of interest should not be allowed."

But it is urged by the cheap offices, "Oh, but we have a large protecting capital," which *protecting* capital, as Mr. De Morgan justly remarks, would, "if the premiums were really too low, be an injury and not a benefit, for since this capital is really paid for in whole or in part out of

premiums, it would not preserve the office from insolvency, but would rather accelerate its progress towards bankruptcy."

It is needless to observe that proprietors of Life Offices do not embark their capital to make up an *anticipated* deficiency, but like other investments, their capital is sunk with the view of legitimate profit, and as a *safeguard* against any *unexpected* or *sudden* increase in the mortality, and in the fluctuation of interest. If they act prudently for their own interest, as well as for the safety of the assured, they will take care to charge such a rate of premium as will, in the opinion of an experienced and qualified Actuary, meet every probable risk, and cover the expenses of management, and will, in addition to the interest to be obtained by ordinary investment, also yield them a fair equivalent for the money which they have risked for the protection of the assured.

The Author is not contending for high or excessive rates; all that is desired is, that the rates should be *sufficient* and *fully adequate* to meet the risks and expenses incurred. On this point Mr Griffith Davies makes the following excellent observations. "The evil of charging excessive premiums cannot, however, long remain in a country where capital is allowed to flow freely from one channel to another, as the natural effects of competition must necessarily reduce the profits on Life Assurance to the level of that derived from other species of investments; on the

contrary, the peculiar nature of the subject renders it extremely dangerous lest the rates for Life Assurance should be so far reduced as to diminish the security of those who may select this mode of accumulating their savings for the benefit of their families; for if the premiums charged by societies established for these purposes should, by excessive competition, be rendered inadequate to the payments of the claims which, sooner or later, must come upon them, whatever honour, wealth, or probity, the present managers of them may possess—whatever capitals they may boast of—or however prosperous they may appear to go on, even for a considerable time, the result must ultimately terminate in litigation, disappointment and ruin, and instead of a national benefit, Life Assurance in such a case would inevitably become a national calamity."

The Equitable Life Office, whose great success is generally appealed to in justification of reduced premiums, it must be remembered not only enjoyed a monopoly, but, as has already been stated, the rate of premiums originally charged was enormously high, and, in addition to this, they were enabled to invest their funds in the purchase of government stock at very low prices, for, as observed by the late Mr. Morgan, "during the long series of years in which this society has existed, the nation, for a considerable part of the time, has been engaged in foreign wars. These, by depressing public credit, have afforded the opportunity of investing money in

the funds to great advantage, and have thus contributed in no inconsiderable degree to create the surplus of the society. From the year 1777 to 1786, the average price of stock in the 3 per cents. was about 60 per cent., and from the year 1796 to 1816, the average price of the same stock was below 60 per cent., or 24 per cent. lower than its present price. But no reliance ought to be placed on advantages of this kind. Another war may reduce the value of stock in the funds to *half* its present value, or still lower, if some of our modern statesmen should succeed in breaking the public faith by destroying the sinking fund. It would be madness, therefore, to found any measure on a property so fluctuating. The addition to the surplus arising from the improved state of public credit is an accidental circumstance, affording no proof of the excellence, any more than a deficiency in the capital arising from its depreciated state would have afforded proof of any defects in the construction of the society, and is mentioned merely as one of the causes which have produced its present opulence."

And in 1828, when the pamphlet from which the above observations have been quoted was written, and when the price of consols varied from $82\frac{1}{8}$ to $88\frac{3}{8}$, he proceeds to observe —"That all the causes hitherto noticed as having conduced to promote the welfare of the society, no longer exist to enrich it. The premiums have been reduced in some instances nearly one-half. The

policies are seldom or ever forfeited; and the purchases made in the public funds at their present price are more likely to be disadvantageous than beneficial to the society."

From 1829 to the present year the average price of consols has been about 90, and the price at present is 96*, so that it will appear that at the present time circumstances are peculiarly unfavourable, so far as the interest of money is concerned, for the success of any new undertaking which does not take the precaution of adding a considerable per centage to the net premiums to cover any extraordinary mortality, the expenses of management, and the fluctuation in interest.

By reference to Table 8, it will appear that the expectation of an Irish life at 20, is 34.95; at 30, 29.71; at 40, 23.36; at 50, 17.76; so that, as compared with the combined English experience, an office may calculate upon receiving upon an Irish life of 20, only thirty-five premiums, instead of forty-one; at 30, only thirty instead of thirty-five; at 40 only twenty-four premiums instead of twenty-eight; and at 50 only eighteen premiums instead of twenty-one. Notwithstanding this fact, in addition to the risk already incurred of charging too low a rate of premium *even for the English lives*; if report speaks true, *some* of the cheap offices do a *very extensive Irish business*, so that an extensive business, and the announcements which

* December 21, 1843.

are frequently seen among the advertisements of the day, to the effect that in addition to a large subscribed capital, the policy holders have the additional security of £ per annum for premiums, are not always to be taken as indicative of extensive security; for where much Irish business is transacted the advertisement, strictly speaking, should run—"in addition to a large subscribed capital the policy holders have the additional security of £ per annum annual income for premiums, £ of which are from Irish Assurances, from which the society has reason to expect they will receive several premiums *less* than they ought, and than which they expect to receive on an English Assurance"

The offices generally are getting very cautious of Irish lives, and the circumstance is only mentioned here to point out an *additional* risk that the cheap offices incur.

These remarks have been extended to a much greater length than was intended, and the Author would, in conclusion, merely express a hope that the example of liberality set by the various private companies in contributing their experience, and of disinterested zeal displayed by the Actuaries who superintended the compilation of the materials, and deduced therefrom a rate of mortality amongst assured lives, will be followed by the government, and by their Actuary Mr. Finlaison, in supplying the materials which, it is presumed, they possess in abundance in several of the government depart-

ments relative to sickness and mortality, which might be worked out by Mr. Finlaison, or under his superintendence. In the mean time, it would not, perhaps, be considered too liberal on the part of the government, if they were to print, for the benefit of the public, the various tables on Life Contingencies, which their actuary has made from government records, and at the national expence, and, in reference to which, the following petition was printed, and signed by upwards of 40 gentlemen connected with Life Assurance Offices in the year 1837, but which was never presented, *probably* in the expectation that the agitation of the matter would be sufficient to induce their publication.

TO THE HONOURABLE THE COMMONS OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND, IN PARLIAMENT ASSEMBLED.

The humble Petition of the undersigned Actuaries of Life Assurance Offices, in London, and of others connected therewith.

Sheweth,

That a very large portion of the property of this country is held upon tenures depending upon the duration of human life, and that the business of Life Assurance has of late extended so as to affect the interests and future happiness of large numbers of all classes in the community.

That one of the principal elements in all calculations of the value of property depending on human life, and of the value of the risks of Life Assurances, is the average duration of human existence, as determined by observations: and the means by which such calculations are made or facilitated, are tables of the value of Life Annuities, deduced therefrom.

That as the accuracy of Annuity, and other tables, founded on the rate of mortality, depends upon the extent of the observations from which they are derived, every addition to them is of national importance.

That to adjust equitably the value of church property, and other life interests,—to measure truly Life Assurance risks, and to afford the means of satisfying the public of the just application of correct principles in such valuations, it is highly necessary that every authentic information bearing upon the subject, should be made generally accessible.

That very extensive tables, have been calculated at the national expense, from data, furnished by Government Records, which were printed by order of your Honourable House, in 1829: and that on these tables the Government now grant Annuities on lives, and it has recently been proposed in your Honourable House, that the value of church property, should be estimated by the same standard.

That of these tables a very limited portion only has hitherto been made available to the public.

Your Petitioners, therefore, humbly pray that your Honourable House will be pleased to order the publication of all tables founded upon the same data as those upon which the Government now grant Annuities on Lives. These tables will comprehend Annuities on Single Lives for males and females

separately, and on every combination of two or more joint lives, at every rate of interest at wh ich they have been respectively computed.

London, *June*, 1837.

Joshua Milne, Sun Life Office
Arthur Morgan, Equitable Assurance Office
George Kirkpatrick, Law Life Assurance Office
Charles Ansell, Atlas Assurance Office
Griffith Davies, Guardian Office
J. D. Bayley, Royal Exchange Assurance Office
Benjamin Gompertz, Alliance Office
W. S. Lewis, Rock Life Assurance Office
James J. Downes, Economic Office
Samuel Ingall, Imperial Life Office
Robert Christie, Universal Life Office
Thomas Lewis, Union Assurance Office
J. M. Rainbow, Crown Assurance Office
Thomas Galloway, ***Registrar***, Amicable Society
E. Charlton, Albion Insurance Office
W. Bury, Hope Assurance Office
H. P. Smith, Eagle Assurance Office
M. Saward, Promoter Life Office
Robert John Bunyon, Norwich Union Life Assurance Office
M. Tate, Pelican Insurance Office
Edward Hulley, Globe Office
Henry Marshall, Metropolitan Office
J. Tullock, Minerva Life Assurance Office
Charles Jellicoe, Protector Life Office
John Robertson, Argus Life Office
Ebenezer Fernie, British Commercial Life Office
J. M. Terry, Hand-in-Hand Life Office
John Laurence, London Assurance
G. H. Heppel, Standard of England Office
J. T. Clement, Licensed Victualler's and General Fire and Life Assurance Office.
Joseph Marsh, National Provident Institution
C. B. Smith, National Life Assurance Society
Edwin James Farren, Asylum Life Office
B. A. M. Boyd, ***Resident Director***, North British Company

J. C. C. Boyd, *Secretary*, United Kingdom Life Assurance
J. T. Barber Beaumont, *Managing Director*, Provident Life Office
Charles M. Willich, *Secretary & Actuary*, University Life Society
F. G. Smith, for Scottish Union Assurance Company
Charles Lewis, West of England Insurance Office
David Foggo, *Secretary*, European Life Insurance Office
T. R. Edmonds, *Actuary* of Legal and General Life Assurance Society
T. Pinckard, of the Clerical, Medical and General Office

As the above petition has never been presented, it has been thought desirable to print it in this Introduction, as it is important that the public should know that there are some valuable and very extensive tables in the hands of the government calculator, which "have been computed at the national expence," and which it is submitted ought to be printed for the public information.

PRACTICAL EXAMPLES

ILLUSTRATIVE OF

THE CONSTRUCTION AND APPLICATION

OF

THE TABLES.

COMPOUND INTEREST.

TABLE I.

Interest is a remuneration allowed by a party borrowing money to the party lending it, and is payable at periods agreed upon at a certain annual rate for every £100. Where it is so paid, the Interest is called "Simple Interest," but where it is not so paid and is added to the sum lent whereby the sum due from the borrower is increased by that amount upon which (instead of upon the original sum) he will have to pay interest—such interest is called "Compound Interest."

EXAMPLE 1.

What will £450 amount to in 12 years at 4 per cent. Compound Interest?

If £100 were lent for one year at 4 per cent. its

amount at the end of the year would be £100 + 4 = £104, and this divided by 100 would give the amount of £1 at the same rate at the end of the year, or £1.04 from which we may easily determine the amount of any other sum in one or more years; for if $1 : 1.04 :: 1.04 : (1.04 \times 1.04) = 1.04^2 = 1.0816$ the amount of £1 at 4 per cent. at the end of two years, and in like manner; if $1 : 1.04 :: 1.04^2 : (1.04 \times 1.04^2) = 1.04^3 = 1.124864$—the amount of £1 at 4 per cent. in three years; and so on for any number of years; the amount of £1 obtained for any given number of years at the *given rate* of interest multiplied by the amount of £1 at the same rate for *one year* will give the amount for the succeeding year, and in this manner Table I. has been constructed, on reference to which, under the head of 4 per cent., against 12 years, we find £1,601032 which multiplied by 450 will give £720.4644* = £720 9s. 3½d., the amount of £450 in 12 years, at 4 per cent. as required; and so with any other amount at the same or any other rate per cent. The Rule being—*Find the amount of £1 in the Table under the given rate per cent. against the given number of years, and multiply it by the sum of which the amount at the same rate and for the same period is required.*

If the interest is payable half yearly the rule is—

* To persons unacquainted with Decimals, it would be useless to give a rule for the conversion of shillings, pence, and farthings into decimals, and *vice versa*, such persons, therefore, are referred to works on Arithmetic. To those who are acquainted with Decimals it is unnecessary to do so.

Take one half of the annual interest and double the number of years, and proceed as in the case where interest is paid annually. For example, if in the above case the interest were payable half yearly, the amount would be obtained thus—Under column 2 per cent., in Table 1, and against 24 years, we find £1.608437—the amount of £1 at 2 per cent. per annum in 24 years, or, which is the same thing, the amount of £1 at 2 per cent. *per half year* in 24 half years, which, multiplied by 450, gives £723.79665 = £723 15s. 11d.—Answer. And if interest were payable quarterly the rule would be—*Take one fourth of the annual interest and multiply the number of years by* 4, *and proceed as in the case where interest is paid annually.* If, in the above example, the interest were paid quarterly, we should refer to column headed 1 per cent., in Table 1, and against 48 years, we should find £1.612227 the amount of £1 at 1 per cent. per annum in 48 years; or, which is the same thing, the amount of £1 at 1 per cent. per quarter, for 48 quarters of a year, which, multiplied by 450, would give £725.50215 = £725 10s. 0½d.—Answer.

It evidently matters not whether the "rate" be called the rate per annum, or per half year, or per quarter, as the amount of any sum at a given rate of interest manifestly depends upon the number of conversions of interest into principal.

EXAMPLE 2.

The amount of £450 in 12 years at 4 per cent.,

Compound Interest, payable annually, - - being £720 9s. $3\frac{1}{2}$d.
" payable half yearly " £723 15s. 11d.
" " quarterly " £725 10s $0\frac{1}{2}$d.

it is required to find the total amount of interest realized. This will evidently be the difference between the sum lent and its amount at the end of the time, and will be respectively,

£720 9s. $3\frac{1}{2}$d.— £450 = £270 9s. $3\frac{1}{2}$d., Amount of interest realised upon £450 in 12 years, at 4 per cent. interest, payable yearly.

£723 15s. 11 d.—£450 = £273 15s. 11d., do. do. payable half-yearly.

£725 10s. $0\frac{1}{2}$d.—£450 = £275 10s. $0\frac{1}{2}$d, do. do. payable quarterly.

DEFERRED SUMS CERTAIN.

TABLE II.

The present value of a sum of money to be received at the end of any number of years, is that which, laid out at a given rate per cent. will amount at that rate, to the sum to be received at the expiration of the given period.

EXAMPLE.

In exmaple 1, of Compound Interest £720 9s. $3\frac{1}{2}$d. = £720.4644 is stated to be the amount of £450 at 4 per cent. in 12 years. £450, therefore, ought to be shewn by Table 2, to be the present value of £720 9s. $3\frac{1}{2}$d. to be received at the expiration of 12 years, supposing interest to be 4 per cent.

On referring to Table 2, under the head 4 per

cent., and against 12 years, will be found £.624597, the present value of £1 to be received at the expiration of 12 years, which multiplied by 720.4644 will give £450, the present value required. This sum might have been obtained by dividing £720.4644 by 1.601032 the amount of £1 in 12 years. For if 1.04 : 1 :: 1 : $\frac{1}{1.04}$ the present value of £1 at 4 per cent. Compound Interest to be received at the expiration of one year; and similarly,—if 1.04 : 1 :: $\frac{1}{1.04}$: $\frac{1}{1.04)_2}$ —present value of £1 at the same rate to be received at the expiration of two years; and so on for any number of years. In this manner Table 2 has been formed—*unity* being divided by the amount against each age at the several rates per cent. in Table 1; and it is manifest that when the present value of £1 for any number of years at a given rate is found, that the Rule for finding the present value of any other sum at any rate per cent. will be *Multiply the present value of £1 at the given rate and the given number of years by any other amount of which at that rate and for that term the present value is required.*

ANNUITIES CERTAIN—AMOUNTS.

TABLE III.

An Annnity Certain, is a sum of money payable at fixed periods without being subject to any contingency.

EXAMPLE.

What will an Annuity of £20 per annum amount to in five years, at 6 per cent. Compound Interest?

On reference to Table 3, under 6 per cent. against 5 years will be found 5.637093, the amount of an Annuity of £1 at that rate and for that term, (or, as it is usually called, the number of years purchase,) which multiplied by 20 gives £112,74186 = £112 14s. 10d.—Answer.

The results contained in the Table were obtained thus:—

The last payment of an Annuity of £1, at 6 per cent. and upon which no Interest is received is	£1.000000
The last payment but one, and upon which one year's Interest accrued	1.060000
Their Sum—Amount of Annuity in 2 years	2.060000
The last payment but two, with 2 years' interest	1.123600
Their Sum—Amount of Annuity in 3 years	3,183600
The last payment but three, with 3 years' Interest	1.191016
Their Sum—Amount of Annuity in 4 years	4.374616
The last payment but four, with 4 years' Interest	1.262477
Their Sum	£5.637093

amount of Annuity of £1 forborne 5 years (or the number of years purchase) and agrees with the

amount given above as taken from the Table; and by proceeding in this manner the Amount of an Annuity for any rate and for any period may be obtained. The Rule for the construction of the Table being *To £1.00000, add the amount of £1 at the expiration of one year, at the given rate of interest obtained from Table* 1, *which will give the amount of an annuity at that rate forborne two years, to this sum add the amount of £1 in two years, which will give the amount of the annuity for three years, and so on (as in the above example) to the end of the period required.* The Table being formed, the rule for finding the amount of any other sum annually will be, *Obtain from Table* 3 *the Amount of an Annuity of £1 at the given rate per cent. and for the given term, and multiply it by the annuity, whose amount, at the same rate and for the same period is required.*

If the annuity is payable half yearly, *Take the quantity from the Table under half of the rate per cent. opposite twice the number of years, and multiply it by one-half of the annuity.*

If payable quarterly, *Take the quantity opposite one-fourth the rate per cent. and opposite four times the number of years, and multiply it by one-fourth of the annuity.*

Or the amount of an Annuity might be found by the following Rule:—

Obtain from Table 1 *the amount of £1 at the given rate of Interest and against the given number of years; subtract unity from it and divide the remainder by the Interest of £1 for one year at the same rate,*

which will give the amount of an Annuity of £1 *at that rate and for that term, and multiply the quotient by the Annuity whose amount is required* Table 3 might also have been formed in this manner though not so readily.

The reason of this rule is manifest, for when *unity* is deducted from the amount of £1 at the given rate and for the given term obtained from Table 1, the remainder must be the total amount of interest realised, and this amount accrued by putting by the interest due each year, upon which also interest was obtained, therefore the difference between the amount of £1, at any rate and for any term, and £1, the sum originally laid out, is equal to the amount of an *annuity of the interest of* £1 at the same rate and for the same term.

The above example might therefore have been obtained thus. From the amount of £1 at 6 per cent. in five years, which, by Table 1, is £1.338226, take £1, the original sum laid out, and the difference £0.338226 is the total interest realised, or the amount of an annuity of £.06 at 6 per cent. in five years; then, by the common rule of proportion:—If £.06 : £0 338226 :: £1 : .56371--the quantity, given above as obtained from Table 3, to the nearest 4th place of decimals, which, multiplied by 20, gives £112.742 = £112 14s.10d. as before.

Table 3, has been constructed upon the supposition that the annuity is payable at the end of the year; if it were payable at the beginning of the year each of the amounts in that Table ought to be in-

creased by one year's interest; the amount of the last payment, therefore, reckoning interest at 6 per cent. upon which one year's interest accrued would be.....£1.060000
The last but one upon which two years interest had been received..... 1.123600

Their sum £2.183600

the amount of an annuity payable at the *beginning* of the year, laid by for two years, which is equal to the amount of an annuity payable at the *end* of the year for three years less *unity*; so that where the annuity is payable at the *beginning* of the year, the rule is *Subtract unity from the amount of an annuity payable at the end of the year*—in Table 3—*at the given rate of interest opposite one year more than the time.*

ANNUITIES CERTAIN—PRESENT VALUES.

TABLE IV.

1st. IMMEDIATE ANNUITIES.—The present value of an Annuity to be entered upon immediately and to continue for a term of years, is that sum which paid down now and invested at a given rate of Interest will, at the expiration of the term,

amount to the same sum as will the Annuity itself invested in like manner.

EXAMPLE 1.

What is the present value of an Annuity of £30 per annum to continue 4 years, reckoning Interest at 4 per cent.?

On referring to Table 4, under the head of 4 per cent. and opposite to 4 years will be found £3.629895 the present value of an Annuity of £1 at that rate and for that term, which multiplied by 30, gives £108.89685 = £108 18s.—Answer.

PROOF.—By Table 1, under the head of 4 per cent. and against 4 years we find £1.169859, the amount of £1 in 4 years at 4 per cent., which multiplied by 108.89685 = £127.3938 = £127 7s. 10d., the sum to which £108.89685 the present value of an Annuity of £30 at 4 per cent. will amount to in 4 years, and

By Table 3, under 4 per cent. and against 4 years will be found £4.246464, the amount of an Annuity of £1 in 4 years at 4 per cent., which multiplied by 30 = £127.3939 = £127 7s. 10d. the amount of an Annuity of £30 at the same rate and for the same term, thus proving the accuracy of the present value as determined from Table 4.

The total present value of an Annuity for a term of years is manifestly equal to the sum of the present values of each year's payment, and by the continued addition of these at the several rates of Interest Table 4 has been formed. For example—by Table 2.

£0.961538 is given as the present value of £1 to be received at the expiration of 1 year at 4 per cent. Interest.
£0.924556 ditto ditto at the expiration of 2 years.

£1.886094 Sum of the above, or present value of an Annuity of £1 for 2 years.
£0.888996 present value of £1 to be received at the expiration of 3 years.

£2.775090 Sum of the above, or present value of an Annuity of £1 for 3 years.
£0.854804 present value of £1 to be received at the expiration of 4 years

£3,629894 Sum of the above, or present value of an Annuity of £1 for 4 years, &c. &c.

2nd. Perpetual Annuities.—The present value of a Perpetual Annuity is that sum which paid now and invested at a given rate of Interest will perpetually produce the same amount as will the Annuity itself invested in like manner.

It is manifest that if £100 were sunk at 5 per cent. that it would be the present value of a Perpetual Annuity of £5, and consequently that £20 would be the present value of a Perpetual Annuity of £1, for— If £ 5 : 100 :: 1 : 20 or

If £.05 : £1 :: 1 : $\frac{1}{.05} = 20$ — and in a similar manner the present value of a perpetuity at any other rate of Interest might be found, there-

fore *The present value of a perpetuity of £1 may be found by dividing £1 by the Interest of £1 at the given rate for one year, and the quotient multiplied by any other perpetuity will give the present value of such perpetuity.*

EXAMPLE 2.

What is the present value of a Freehold Estate producing £150,per annum, reckoning Interest at 4 per cent.?

At the end of Table 4, under column headed 4 per cent, will be found $25 = \frac{1}{.04}$ which multiplied by £150 = £3750.—Answer.

Now at 4 per cent. £3,750 sunk will yield £150 per annum, therefore £3,750 invested at 4 per cent. and never withdrawn, is equal to a Perpetual Annuity of £150 invested in like manner, it producing annually exactly that sum.

3rd. DEFERRED ANNUITIES.—The present value of an Annuity not to be entered upon until the expiration of a given period, is that sum which paid down now and invested at a given rate of Interest will, at the end of the period during which the Annuity is deferred, amount to the sum which will *then,* at the same rate of Interest, purchase the Annuity in question to be entered upon *immediately.*

EXAMPLE 3.

What is the present value of an Annuity of £30, to be entered upon at the expiration of 4 years and then to continue 10 years, reckoning Interest at 4 per cent.?

By the exemplification of the construction of Table 4, it has been shewn that the total value of an annuity for any given term is equal to the total of the present values of each year's payment throughout the term, consequently if the present value of the first, or any number of year's annuity, is deducted from the present value of the annuity for the whole term, the difference will be the present value of the annuity for the remainder of the term.

In the present case 4 + 10 = 14—the period during which the annuity is deferred, added to the period it is to be continued when entered upon, and on reference to Table 4, under 4 per cent., and against 14 years, will be found 10.563123, the present value of an annuity of £1, to be entered upon immediately, and to continue 14 years, and in the same column opposite 4 years will be found £3.629895, the present value of an annuity of £1, to be entered upon immediately, and to continue four years, therefore £10.563123—£3.629895 = £6.933228, present value of an annuity of £1, to be entered upon at the expiration of four years, and then to continue ten years, which, multiplied by 30 = £207,99684 = £207 19s.11d. the present value of an annuity of £30 deferred for the like period and to be continued for the same term.

Proof.—On reference to Table 1, under the head of 4 per cent., and against four years, will be found £1.169859, the amount of £1 in four years, at 4 per cent. which, multiplied by 207.99684 gives £243.3268, which will be found to be the present value of an annuity of £30, to be entered upon immediately, and

to continue ten years; *for*, by Table 4, under 4 per cent. and against ten years, we find £8.110896, the present value of an annuity of £1, to be entered upon immediately, and to continue ten years, which, multiplied by 30, will give £243.3268, as before.

If the annuity were a Deferred Perpetuity, the present value would be found in a similar manner; the *general* rule being, ***From the present value of the annuity for the whole of the term, at the given rate of interest, subtract the present value of the annuity at the same rate for the term during which it is to be deferred.*** And, consequently, the value of a deferred annuity subtracted from the value of the whole term annuity, will leave the value of the *temporary* annuity, *i. e.* of the annuity for the term deferred.

NEW RATE OF MORTALITY.

TABLE V.

The numbers in column 2, of Table 5, against each age in column 1 are the numbers which have completed or survived those ages out of the 100,000 who completed their 10th year of age, and from which, by the simple rule of Proportion, the number who might be expected to survive any given age or die within the term, out of any other number, at any age, &c. may be ascertained.

EXAMPLE 1.

Out of 3,500 persons living at the age of 20, how many may be expected to survive the age of 40?

On reference to Table 5, it will be found that there are at 20 years of age 93,268 persons living, of whom 78.653 survive the age of 40; then

As 93.268 : 78.653 :: 3500 : 2952 *nearly*, the number out of 3500 at the age of 20 who may be expected to survive the age of 40.

EXAMPLE 2.

It is required to determine the number of deaths that may be expected out of 3500 persons alive at the age of 20 during the next 20 years?

By Table 5, it appears that the number living at the age of 20 is 93,268 and the number living at the age of 40 is 78,653, therefore 93.268—78.653 = 14.615 the number who died during the interval, hence 93,268 : 14.615 :: 3500 : 549 the number who may be expected to die in 20 years or before attaining 40 years of age, out of 3500 alive at 20 years of age.

PROBABILITIES OF LIFE.

TABLE VI.

EXAMPLE 1.

Required, the probability of a person aged 30, dying within and surviving one year?

On reference to column 2, in Table 6, and against 30 years of age, will be found .0084248, the probability of a person aged 30 *dying* in one year; and on reference to column 3, in the same Table and against the same age, will be found .9915752, the probability of a person aged 30 *surviving* one year; and the two added together will give *unity* or *certainty*, for it is manifestly certain that a person at any age will either survive a given period or die within it, from which it follows that if we know the probability of a person at any age dying within any given period, and subtract it from *unity*, the difference or remainder will be the contrary probability, or the probability of surviving the given period; and, on the other hand, if we subtract the probability of surviving from *unity*, the remainder will give the probability of not surviving, or of dying within the given period.

The probabilities of dying within one year are obtained by dividing the number of deaths against each age by the number living at the same age, and the quotient subtracted from unity gives the probability of surviving one year. Or, the probability of surviving one year may be obtained by dividing the number living one year older than the given age by the number living at the given age, and the quotient subtracted from unity gives the probability of dying within one year. And in this manner Table 6 was constructed.

EXAMPLE 2.

Required the probability of a person aged 16, surviving the age of 20?

This will evidently be the number living at the age of 20, divided by the number living at the age of 16, or by Table 5, $\frac{93268}{95965} = .97190$

EXAMPLE 3.

Required the probability of a person aged 16, *dying* in the 21st year of his age.

The number who die in the 21st year of age, being the decrement set against age 20, according to Table 6, is 680, and this divided by 95965, the number living at 16, will evidently give the probability of *one* of that number dying in the 21st year of age, or $\frac{680}{95965}$; this probability might have been obtained by subtracting the probability of the life surviving the 21st year of age, from the probability of its *entering* upon that age, or the probability of its *surviving* the 20th year of age, thus:—

$$\frac{93268}{95965} - \frac{92588}{95965} = \frac{680}{95965}$$ as before, and

this will be manifest upon inspection, as the first numerator is the number living at 20, and the second, the number living at 21, and the difference is the number of deaths which occur within the 21st year, and the denominator the number living at 16, is common to each of the three fractions.

From the above it will appear that, the rule for

determining the probability of a life surviving any age is,

Divide the number living at the advanced age by the number living at the present age.

And of its failing in any year of age,

Divide the number of deaths which occur in that year by the number living at the present age; or subtract the probability of the life surviving the given year from the probability of its entering upon that year.*

EXAMPLE 4.

Suppose a Life Assurance Office to have 2000 policies in force, averaging £1000 each policy, viz., 200 at 25 years of age; 300 at 30; 400 at 35; 500 at 40; 300 at 45; 200 at 50; 50 at 55; and 50 at 60; it is required to determine the number and the amount of claims by deaths that may be expected to be made within one year.

The probabilities of surviving and of dying in Table 6, being the probabilities of *one* person at the given ages dying within, or surviving one year, it is manifest that the probabilities of any other number dying within, or surviving that period, will be obtained by multiplying such probabilities by the number in question. Hence,

Age.	Probability of one Person dying in one year.		Number of Persons.		Probable number of Deaths.
25	.0077700	×	200	=	1.55400
30	.0084248	×	300	=	2.52744

* The number of deaths which occur in any year is represented by the decrement set opposite the next younger age.

Age.	Probability of one Person dying in one year.		Number of Persons.		Probable number of Deaths.
35	.0092877	×	400	=	3.71508
40	.0103619	×	500	=	5.18095
45	.0122120	×	300	=	3.66360
50	.0159386	×	200	=	3.18772
55	.0216643	×	50	=	1.08321
60	.0303362	×	50	=	1.51681

Total number of Deaths that may be expected, . . . 22.42881 = $22\frac{1}{2}$ nearly, which multiplied by £1000, the amount of each policy, gives £22,429, the whole amount of claims that may be expected. This number, and the amount being determined from the policies in force at the *beginning* of the year, only indicates the *probable* number and amount of claims that may be expected to arise out of that number only, and upon the supposition that all the policies continue in force, except those which become claims. But as an addition will be made during the year, by the introduction of new business, and as some policies may lapse, or be surrendered, they must be taken into account before a comparison can be made of the number of deaths that might be expected, with the number that actually occurred. Of the new policies, and those surrendered, it may be assumed that taking one with another, they were each in force one half-year, or, which is the same thing, that one-half of them were in force the whole of the year. In making the comparison at the *end* of the year, there-

fore, one-half of the number of *new* policies at each age, should be added to the number in force at each age at the *beginning* of the year, and one-half of those lapsed or surrendered at each age should be deducted from the number in force at each age, the numbers being thus corrected, the number of deaths expected according to the Table may be obtained as above. An office may, therefore, with very little difficulty, ascertain whether the amount of claims during the year is more or less than they had reason to expect.

EXAMPLE 5.

Required the probability of two lives aged 16 and 21, *both* surviving 5 years ?

The probability of a life aged 16, surviving 5 years, by Table 5 is $\frac{92588}{95965}$; and of a life aged 21, surviving 5 years, is $\frac{89137}{92588}$; and these two quantities multiplied together will give the probability in question. For *unity* or certainty bears the same ratio to either of the probabilities as the remaining probability does to that required, viz.,

$$\text{As } 1 \; : \; \frac{92588}{95965} \; :: \; \frac{89137}{92588} \; : \; \frac{92588}{95965} \times \frac{89137}{92588}$$

$$= \frac{89137}{95965} = .92885 \text{ Answer.}$$

Then to find the probability of any two given lives, *both* surviving a given period, the rule is simply,

Multiply the separate probabilities together, and the product will be the probability required; and the same rule applies to the probability of any two lives, both failing in, or within any given period, and in a similar manner the probabilities of three or more lives surviving, or failing within a given period, may be obtained.

EXPECTATION OF LIFE.

TABLE VII.

By Expectation of Life is meant the average number of years that a person, at any age, may yet expect to live, taking one life with another. For example, a person aged 30, (see Table 7, 30 years of age,) according to the experience amongst assured lives many expect to live $34\frac{1}{2}$ years nearly, or, in other words, he may expect to attain the age of $64\frac{1}{2}$ years nearly.

The total existence enjoyed in any one year by the number of persons alive at any age at the expiration of one year, will manifestly be as many years as there are persons who survive the year, added to the existence enjoyed by those who die within the year. And of those who die within the year, it is probable that as many die at equal intervals during the first half year, as die at the same intervals during the last half of the year, or, in other words, that of

those who die in any one year, taking one life with another, it may fairly be assumed that, upon an average, they each enjoy one-half year's existence—therefore, the total existence enjoyed at the expiration of a year, by those alive at any given age at the beginning of the year, is equal in years to the number who survive the year, plus one-half of those who died within the year.

EXAMPLE.

Required the number of years that a person aged 90, may expect to live.

On reference to Table 5, it appears that, of 1319 persons alive at the age of 90.				Who enjoyed between them in each year as many years as there are persons, or the under-mentioned number of years.	To which we must add one-half of the number who died in each year or	Which gives.
892	survived	1	year.	892	$213\frac{1}{2}$	$1105\frac{1}{2}$
570	,,	2	,,	570	161	731
339	,,	3	,,	339	$115\frac{1}{2}$	$454\frac{1}{2}$
184	,,	4	,,	184	$77\frac{1}{2}$	$261\frac{1}{2}$
89	,,	5	,,	89	$47\frac{1}{2}$	$136\frac{1}{2}$
37	,,	6	,,	37	26	63
13	,,	7	,,	13	12	25
4	,,	8	,,	4	$4\frac{1}{2}$	$8\frac{1}{2}$
1	,,	9	,,	1	$1\frac{1}{2}$	$2\frac{1}{2}$
0	,,	10	,,	0	$\frac{1}{2}$	$\frac{1}{2}$
		Sum		= 2129	+ $659\frac{1}{2}$	= $2788\frac{1}{2}$

And this divided by 1319, gives 2.11, or $2\frac{1}{9}$ years expectation of life to a person aged 90, and agrees with the expectation as given in Table 7, opposite to 90 years of age.

The $659\frac{1}{2}$, the sum of all the halves of the number

of deaths in each year, is manifestly one-half of the number who were alive at the age of 90 ; the expectation might, therefore, have been obtained by dividing the sum of all who survived that age 2129, by the number alive at that age 1139, and adding to the quotient $\frac{1}{2}$ for

$$\frac{2788\frac{1}{2}}{1319} = \frac{2129 + 659\frac{1}{2}}{1319} = \frac{2129}{1319} + \frac{1}{2} = 2{,}11$$

so that a Table of the Expectations of Life may easily be formed, by first obtaining the successive sums of the numbers surviving each age, and then dividing them by the number living at each age, and adding $\frac{1}{2}$ to the quotient, and in this manner Table 7 was constructed.

COMPARATIVE EXPECTATIONS OF LIFE.

TABLE VIII.

This Table speaks for itself, and sets forth the Expectations of Life as deduced from various rates of mortality, and also amongst the different descriptions of assured lives, and will be found not only very interesting, but very important, particularly as from the Irish experience, it appears that, of that class of assurances, at some of the younger ages, the Expectation of Life is as much as 6 years less than that obtained from the combined English town and

country experience.—(See observations on the Irish experience, in "Introduction.")

LIFE ANNUITIES AND ASSURANCES.

TABLES IX. X. AND XI.

ANNUITIES.

Required the Value of an Annuity of £1 per annum, on a life aged 97, reckoning interest at 3 per cent?

If this were an annuity *certain*, its value would be equal to the sum of the present values of £1, to be received at the expiration of 1 and 2 years, but as the payment of the annuity is *contingent* upon the existence of the life the value of each year's payment of the Life Annuity will be less than that of an annuity *certain*, in the ratio of *unity* or *certainty* to the probability of the life surviving each year.

By Table 2, under the head of 3 per cent., we find.

.970874 = present value of £1, to be received at the expiration of one year.

.942596 = ditto ditto, two years.

and, by Table 5 we find the number living at the ages 98 and 99 to be respectively 4 and 1, and these, divided by 13, the number living at 97 will give $\frac{4}{13}$ and $\frac{1}{13}$, the probability of a life aged 97 surviving 98

and 99 years of age; the latter—the oldest age which can be survived according to the Table. The present value of the first year's payment, therefore, on a life aged 97, will be

$$\text{As } 1 \quad : \quad \frac{4}{13} \quad :: \quad .970874 \quad = \quad \frac{4 \times 970874}{13}$$

And of the second,

$$\text{As } 1 \quad : \quad \frac{1}{13} \quad :: \quad .942596 \quad = \quad \frac{1 \times .942596}{13}$$

And the total value will be

$$\frac{(4 \times 970874) + 1 \times (.942596)}{13} \quad = \quad \frac{4.826092}{13} = 0.371$$

as given in Table 12, in column headed 3 per Cent., opposite to 97 years of age.

Now the value of a fraction is not altered in any degree by multiplying its numerator by any quantity *provided* we also multiply its denominator by the same quantity. For example, if we multiply the numerator and denominator of the fraction $\frac{1}{2}$, by 2 and by 30, we get $\frac{2}{4}$, and $\frac{30}{60}$, each of which is still equivalent to $\frac{1}{2}$, for if the fraction in question be of 60 shillings, $\frac{1}{2}$ of it is 30s., and $\frac{1}{4}$ of it being 15s., $\frac{2}{4}$ths. is necessarily 30s., and, in like manner, $\frac{1}{60}$th. of 60s. being 1s., the $\frac{30}{60}$ ths. must be 30s. and so with any other fraction. If, for example, we say, the probability of a person living 1 year is $\frac{1}{2}$, of another $\frac{2}{4}$, and of a third $\frac{30}{60}$ths, their probabilities are *each* equal to $\frac{1}{2}$, this being premised, what follows will appear clear.

The following are the quantities given above, from

which the value of an annuity, on a life aged 97, at 3 per cent. interest, was obtained.

$$\frac{(4 \times .970874) + (1 \times .942596)}{13} = 0.371$$

which, expressed in words, is the number living at 98 years of age, multiplied by the present value of £1, to be received at the expiration of 1 year, *plus* the number living at the age of 99, multiplied by the present value of £1, to be received at the expiration of 2 years, divided by the number living at the age of 97.

Now, if we multiply each of the quantities in the numerator and denominator by .056858 the present value of £1, to be received at the expiration of 97 years, (the same as the age of the life,) we shall get

$$\frac{(4 \times .055202) + (1 \times .053594)}{13 \times .056858}$$

i. e. the number living at 98, multiplied by the present value of £1, to be received at the expiration of 98 years, *plus* the number living at 99, multiplied by the present value of £1 to be received at the expiration of 99 years, divided by the number living at 97, multiplied by the present value of £1, to be received at the expiration of 97 years, which is equal to

$$\frac{.274402}{.739154} = .371 \text{ as before,}$$

and in a similar manner, the value of an annuity at any other age may be obtained.

But the D and N columns for the rates $2\frac{1}{2}$, 3, and

$3\frac{1}{2}$ per cent. in Tables 9, 10, and 11, contain the numerator and denominator that will obtain at each age; the quantities in column D being the number living at each age, multiplied by the present value of £1, to be received at the expiration of as many years as the age, and the quantities in column N, opposite to each age, are respectively the sum of all the quantities in column D., at all the ages older than the given age; therefore,

The quantity in column N, opposite to any age, divided by the quantity in column D, at the same age, will give the value of an annuity at that age.

And in this manner the values of the annuities at $2\frac{1}{2}$, 3, and $3\frac{1}{2}$ per cent. in Table 12 were obtained.

For example, at $2\frac{1}{2}$ per cent. (See Table 9.)

$$\begin{array}{l} \text{N at 98} = \\ \text{D at 98} = \end{array} \frac{0.08676}{0.35573} = .244 \text{ the value}$$

of an annuity of £1 per annum on a life aged 98, and agrees with the value given in Table 12.

$$\begin{array}{l} \text{N at 97} = \\ \text{D at 97} = \end{array} \frac{0.44249}{1.18503} = .373 \text{ the value}$$

of an annuity of £1 per annum, on a life aged 97, as also given in Table 12.

Column S in Tables 9, 10, and 11, is the sum of the quantity at each age, and at all the ages older than the given age in column N, and is useful in finding the values of increasing and decreasing annuities.

ASSURANCES.

The difference between the value of an Annuity

and that of an Assurance is, that in the former, as has already been shewn, each year's payment depends upon the probability of the life *surviving* each year of age, whereas, in the latter, the value depends upon the probability of the life *failing* in each year, and in the calculation of the premiums, the sum assured is, in all cases, assumed to be payable at the expiration of the year in which the life fails.

The present Value, therefore, or "Single Premium" for an assurance on a life at any age, is equal to the sum of the present values of £1 certain, to be received at the expiration of 1, 2, 3, &c., &c. years to the end of life, multiplied respectively by the probability of the life failing in each year.

EXAMPLE.

Required, the single premium to secure £1 on a life aged 97, reckoning interest at 3 per cent.

By Table 2,—.970874 = Present value of £1 to be received at the expiration of 1 year.

„ .942596 = ditto ditto, 2 years

„ .915142 = ditto ditto, 3 „

And by Table 5,—$\frac{9}{13}$ = Probability of a life aged 97 failing in or before completing the 98th year of age.

$\frac{3}{13}$ = ditto 99th year.

$\frac{1}{13}$ = ditto 100th ditto.

Then,

$$\frac{(9 \times .970874) + (3 \times .942596) + (1 \times .915142)}{13} = .96005$$

the Single Premium required ; but if, as in the case of Annuities (see page 26) we multiply the numerator and denominator by .056858 the present value of £1 to be received at the expiration of 97 years, (the same number of years as the age,) the value will not be altered, and we shall have

$$\frac{(9 \times .055202) + (3 \times .053594) + (1 \times .052033)}{13 \times .056858} = .96005$$

as before, and in a similar manner the single premium for an assurance at any other age may be found.

But we have already got each of the denominators that would obtain at each age (the number living at each age multiplied by the present value of £1, to be received at the expiration of the same number of years as the age)—in column D, and the quantity in column M, opposite to any age, is equal to the sum of the decrements opposite to that age, and all the ages older than the given age in Table 5, multiplied *respectively* by the present value of £1. to be received at the expiration of one year more than the given age, as, for example :

Age.	Decrement.	Present value of £1 due at the end of one year more than the age.
99	1	× .052033 = .052033 = M, opposite to 99 years of age
98	3	× .053594 = .160782
		Sum = .212815 = M, ditto, 98
97	9	× .055202 = .496818
		Sum = .709633 = M, at 97

and the last quantity, .709633, is the sum of the products in the numerator above, and agrees with the

quantity in Table 10, in column M, opposite to 97 years of age, and the quantity in column D, opposite to 97 is .73915, and corresponds with the product of the quantities in the above denominator.

Then $\frac{.70963}{.73915} = .96005$ as before, and agrees with the quantity in Table 15, in column headed, "Single Premium," opposite to 97 years of age, so that, where the columns D and M, are formed the rule to determine the single premium is, *Divide the quantity in column M opposite to the age by the quantity in column D, opposite to the same age.* and, in this manner, the single premiums at each age in Table 15 were obtained.

If the *annual premium* for an Assurance were £1 per annum, its equivalent present value, or "Single Premium," would manifestly be £1 paid down,* added to the present value of an annuity of £1, to be paid during the life in question, or on a life aged 97

$$1 + \frac{.27439 = \text{N, opposite to 97}}{.73915 = \text{D, do.}}$$

which is equal to $\frac{.73915 + .27439}{.73915} = \frac{1.01354}{.73915}$

then by the simple rule of proportion, If

$$\frac{1.01354}{.73915} : 1 :: \frac{.70962 = \text{M, at 97}}{.73915 = \text{D, at 97}} : \frac{.70962}{.73915} \times \frac{.73915}{1.01354}$$

$$= \frac{.70962 = \text{M, at 97}}{1.01354 = \text{N, at 96}} \quad .70014$$

the annual premium for an assurance of £1 on a life aged 97, and corresponds with the quantity given in

* The Annual Premium for an assurance is always paid at the beginning of the year.

Table 15, in column headed "Annual Premium," opposite to 97 years of age.

The rule, therefore, to determine the annual premium for an assurance of £1 is,

Divide the quantity in column M, opposite to the given age, by the quantity in column N, opposite to the age one year younger; and, in this manner, the annual premiums at each age, in Table 15, were obtained.

It is also manifest from the above that the annual premium might have been obtained by the following rule:

Divide the Single Premium by 1 *plus the value of an annuity on the life at the given age.*

Column R is the sum of the quantity at each age, and all the ages older than the given age in column M, and is useful in finding the values of increasing and decreasing assurances.

LIFE ANNUITIES.—SINGLE LIVES.

TABLE XII.

It has already been shewn, in page 27 that the rates $2\frac{1}{2}$, 3, and $3\frac{1}{2}$ per cent. in this Table, have been constructed from the D and N columns in Tables 9, 10, and 11, but as D and N columns have not been constructed for any other rates of interest, it was found to occupy less time to calculate the remaining rates by the ordinary method.

As the payment of an annuity depends upon the

party being alive when it becomes due, and as an annuity is considered to be due at the end of each year, it is manifest that the value of an annuity on a life aged 99, the oldest age in the Table, is equal to 0; and on a life aged 98, the value, if the life were certain to survive the year, would at the end of the year be equal to £1, plus an annuity on a life aged 99, the *present value* of which reckoning interest at 3 per cent. is manifestly.

$1 + 0 \times .970874 = .970874$; but as the life is not certain to survive the year, this value must be diminished in the ratio of certainty or unity to the probability of its surviving the year, and will be

$$\text{As } 1 : \tfrac{1}{4} :: .970874 : \frac{.970874}{4} = .243$$

and corresponds with the value given in Table 12, under 3 per cent, and opposite to 98 years, and by proceeding in this manner from the oldest to the youngest age, the rates 2, 4, 4½, 5, 6, 7, and 8, per cent. have been computed, and is the method adopted by Mr. Milne in his excellent treatise on annuities.

The rule being

Multiply unity added to the value of an annuity on a life one year older than the given life by the present value of £1, *due at the end of* 1 *year, and by the probability of the given life surviving* 1 *year, and the product will be the value of an annuity on the given life.*

The table being formed, the value of any other amount at any given age and rate of interest, may be readily obtained by the following rule :

Multiply the annuity of £1 at the given age and rate per cent. by the annuity, whose amount is required, and the product will be the value of such annuity.

EXAMPLE 1.

Required the value of an Annuity of £150 per annum, on a life aged 54 reckoning interest at 3 per cent?

By Table 12, opposite to 54 years of age, will be found 12.385. the present value of £1 per annum on a life at that age, which, multiplied by 150 = £1857.75 = £1857.15 the value required.

If it were required to find what annuity should be granted in consideration of a sum to be paid down, the rule would manifestly be

Divide the sum to be paid down by the present value of an annuity of £1 on the given life at the given rate of interest, as for

EXAMPLE 2.

What Annuity ought to be granted on a life aged 54 in consideration of £1857.15 paid down, reckoning interest at 3 per cent?

12.385 was shewn in the last example to be the value of an annuity at 3 per cent. on a life aged 54.

then $\frac{1857.75}{12.385}$ = £150 Answer,—and corresponds with the annuity in example 1, whose present value was shewn to be £1857.75 = £1857.15.

LIFE ANNUITIES.—JOINT LIVES.

TABLE XIII.

The same reasoning employed with respect to Annuities on Single Lives, is applicable to Joint Lives, the rule to determine the value of an annuity on the latter being,

Multiply unity added to the value of an annuity on two Joint Lives, respectively, one year older than the two given lives, by the present value of £1, due at the end of one year, and by the probability of the two given lives jointly surviving one year.

EXAMPLE.

Required, the value of an Annuity on two Joint Lives aged 89 and 84, reckoning interest at 3 per cent?

The two lives one year older than these respectively, are aged 90 and 85, and, on reference to Table 13, in the column headed, "Older," will be found 90, and in the column on the right, headed, "Younger," will be found 85, opposite to which, in the column headed, 3 per cent, will be found,

0.946 the value of an annuity on two joint lives, aged 90 and 85,

And on reference to Table 6, it will be found that

.7076180 is the probability of a life aged 89, surviving one year

.8103215 ditto 84 years, ditto

then .7076180 × .8103215 = .57340 the probability of the lives jointly surviving one year

and by Table 2 .970874 = present value of £1 at 3 per cent. due at the end of one year.

then 1.946 × .970874 × .57340 = 1.083 the value of an annuity on the two lives aged 89 and 84 as required, and which corresponds with the value in Table 13, opposite to 89 and 84, in column headed 3 per cent., and in this manner by beginning at the ages

	99	& 94	at the several rates of interest, all the joint lives, where the difference of age is 5 were obtained, but it was not thought necessary to print the values of any joint lives at an older age than 90.
then	98	// 93	
//	97	// 92	
//	96	// 91	
//	95	// 90	
//	94	// 89	
//	93	// 88	
//	92	// 87	
//	91	// 86	
//	90	// 85	
//	89	// 84	
	&c.	&c.	

And in a similar manner all the other quantities at the several rates of interest and differences of age in Table 13 were obtained; the value of the oldest of the two given lives at the given difference of age being first obtained, and then the values of the next two respectively, one year younger, &c.

The Table being formed, the value of an Annuity for any amount at any of the given ages, and rates of interest, may be obtained in the following manner.

Multiply the value of the annuity of £1 at the given ages and rate of interest by the annuity, whose value is required, and the product will be the value of such annuity.

EXAMPLE 1.

Required the value of an Annuity of £30 per annum on two joint lives aged 71 & 51, reckoning interest at $3\frac{1}{2}$ per cent?

On reference to Table 13, in column "$3\frac{1}{2}$ per cent." opposite to 71 & 51, will be found 5.487, which, multiplied by 30, gives 164,610 = £164 12 2, the value required?

EXAMPLE 2.

Required the value of an Annuity of £50 per annum on two joint lives aged 71 and 53, reckoning interest at $3\frac{1}{2}$ per cent?

It will be found, on reference to Table 13, that both these ages are not contained in the Table, but against 71, the older age (in finding the values of annuities on joint lives, the older age is the index of the two ages), we find opposite to the column headed "Younger," that age 53 falls between 51 and 56, and the value at $3\frac{1}{2}$ per cent. on

	71	&	51	is 5.487
and	71	〃	56	〃 5.240
			Difference	0.247

and this being the difference for 5 years,

$\frac{1}{5}$th or, 049 subtracted from 5.487 will give the value on 71 & 52

$\frac{2}{5}$ths " 098..... ditto ditto, on 71 & 53

$\frac{3}{5}$ths " 147..... ditto ditto, " 71 " 54

$\frac{4}{5}$ths " 196..... ditto ditto, " 71 " 55

then $5.487 - 098 = 5.389$, which, multiplied by 50 $= £269{,}450 = £260\ 9$, the value of an annuity of £50 per annum on two joint lives, aged 71 & 53, as required.

And in a similar manner the value of an annuity at any other ages not found in the Table may be obtained.

TWO JOINT LIVES AND THE SURVIVOR.

An Annuity on the Last Survivor of two lives signifies an Annuity to be paid until the expiration of both lives.

It is manifest that an annuity during the joint continuance of two lives *added* to an annuity on the last survivor, are together equal to the sum of similar annuities on each of the lives, for in the case of the Joint Lives, the annuity would cease at the first death, and in the other on the death of the last survivor, consequently the value of the annuity on the last survivor may be obtained by subtracting the value of an annuity on the Joint Lives from the sum of the annuities on the two single lives.

EXAMPLE.

Required the value of an Annuity of £30 per

annum, on the last survivor of two lives aged 51 and 36, reckoning interest at $3\frac{1}{2}$ per cent?

On reference to Table 12, in column headed $3\frac{1}{2}$ per cent, will be found opposite to ages 51 and 36

12.795 = Value of annuity of £1 on a life aged 51,
17.037 = ditto ditto 36,
29.832 = Sum

And on reference to Table 13, in column headed $3\frac{1}{2}$ per cent. will be found 11.260, the value of an annuity on the two joint lives; then 29.832—11.260 = 18.572, which multiplied by 30, gives 55,7160 = £55 14 4—Answer. And in a similar manner the value of an annuity of any other amount may be obtained, the rule being,

From the sum of the values of an annuity of £1 on the separate lives at the given rate, deduct the value of a similar annuity at the same rate on the Joint Lives and multiply the difference by the annuity whose value is required.

ABSOLUTE REVERSIONS—PRESENT VALUES.

TABLE XIV.

The mode of constructing this Table is explained in page 42.

EXAMPLE.

What is the present value of the Reversion to £5000, or which is the same thing, the Single Premium for an assurance of £5000 to be received at

the end of the year, in which a life aged 60 may fail, reckoning interest at 4 per cent. ?

By column 4 per cent. in Table 14, opposite to 60 years of age will be found .59943, the present value of the reversion of £1 on the failure of the life in question ; then

.59943 × 5000 = £2997.15 = £2997 3 0 the value required.

LIFE ASSURANCES—SINGLE LIVES.

TABLE XV.

EXAMPLE 1.

What Single Premium should be charged for an assurance of £2500 on a life aged 55, reckoning interest at 3 per cent. ?

By column headed "Single Premium," in Table 15, and opposite to 55 years of age will be found .62075 the Single Premium to assure £1 on the given life ; then .62075 × 2500 = £1551.875 = £1551 17 6, the Single Premium required.

EXAMPLE 2.

What Annual Premium should be charged for an assurance of £4000 on a life aged 65, reckoning interest at 3 per cent. ?

By column headed Annual Premium in Table 15, and opposite to 65 years of age, will be found.07745, the Annual premium for an assurance of £1 on the given life, then

.07745 × 4000 = £309.8 = £309 16, the Annual Premium required.

The quantities in Table 15 were obtained by means of the D. N, and M, columns in Table 10, as explained in pages 28—31. The mode of obtaining the same results by the ordinary method will be illustrated in the following

EXAMPLE. 3.

Required the Single Premium for an assurance of £1 on a life aged 97, reckoning interest at 3 per cent.

By Table 2 .970874 = Present value of £1, to be received at the expiration of 1 year.

" .942596 = ditto ditto, 2 years.

" .915142 = ditto ditto, 3 "

and by Table 5 $\frac{13-4}{13}$ = Probability of a life aged 97 failing in or before completing the 98th year of age.

" $\frac{4-1}{13}$ = ditto ditto, in 99th ditto

" $\frac{1}{13}$ = ditto ditto, in 100th ditto

Then (see page 28)

$$(\frac{13-4}{13} \times .970874) + (\frac{4-1}{13} \times .942596) +$$

$$(\frac{1}{13} \times .915142) = .96005$$ Single Premium required as contained in Table 15, in column headed "Single Premium," opposite to 97 years of age.

Let us, however, separate the positive from the negative quantities, and we shall have $(\frac{13}{13} \times .970874) + (\frac{4}{13} \times 942596) + (\frac{1}{13} \times .915142) =$ Positive quantities. If we divide each of these by .970874, the present value of £1, to be received at the expiration of one year, and multiply them *again* by that quantity, their value will still be the same, and we shall have

$$.970874\left\{\frac{13}{13} + \left(\frac{4}{13} \times 970874\right) + \left(\frac{1}{13} \times 942596\right)\right\}$$

But the sum of the two last quantities, as was shewn in page 26, is equal to £0.371—the value of an annuity on a life aged 97, if, therefore, we substitute this value we shall have

$$.970874\left\{\frac{13}{13} + 0.371\right\} = 970874 + (.970874 \times 0.371)$$

Let us now bring down the negative quantities from the original expression which are,

$$\left(\frac{4}{13} \times 970874\right) + \left(\frac{1}{13} \times 942596\right)$$

But these have just been shewn to be equal to .0.371 the value of an annuity on a life aged 97, this quantity, therefore, must be subtracted from the above expression, which will give

$$.970874 + (.970874 \times .0.371) - 0.371.$$

Now the middle quantity is the present value of £0.371 to be received at the expiration of one year, (for the present value of £1 due at the end of any number of years, multiplied by any other sum, gives the present value of that sum for the same period), and if we subtract it from the last quantity we shall have .01082 or the discount for one year of the value of

the annuity;* then 970874—.01082=.96005, as before.

The rule, therefore, for finding the Single premium for an assurance by the ordinary method is

From the present value of £1 at the given rate of interest due at the end of one year subtract the discount for one year of the value of an annuity of £1 on the given life at the same rate of interest. And by this rule the quantities in Table 14 were obtained.

The Rule to determine the annual premium as shewn in page 31, is

Divide the single premium by 1 *plus the value of an annuity on the life.*

And in a similar manner it might be shewn, that the Rule to determine the Single Premium for an assurance on two Joint Lives is

From the present value of £1 at the given rate of interest due at the end of one year, subtract the discount for one year of the value of an annuity of £1 on the Joint Lives at the same rate of interest.

And for the Annual Premiums

Divide the single premium by 1 *plus the value of an annuity on the Joint Lives.*

And in this manner Table 16 was formed.

And similarly—

To find the Single Premium for an Assurance on the Last Survivor of Two Lives.

* The discount of any sum is manifestly the difference between that sum and its present value, and may be obtained by multiplying the discount of £1 by any other sum, whose discount is required.

From the present value of £1 at the given rate of interest due at the end of one year, subtract the discount for one year of the value of an annuity of £1 on the last survivor, of the two lives at the same rate of interest.

And for the Annual Premium—

Divide the single premium by 1 *plus the value of an annuity on the last survivor.*

And in this manner Table 17 was formed.

LIFE ASSURANCES.—JOINT LIVES.

TABLE XVI.

The quantities in this Table were constructed by the following rules (see page 42.)

To find the Single Premium.

From the present value of £1 at the given rate of interest, due at the end of one year, subtract the discount for one year of the value of an annuity of £1 on the Joint Lives at the same rate of interest.

To find the Annual Premium :

Divide the Single Premium by £1 plus the value of an annuity on the Joint Lives.

EXAMPLE 1.

Required the single and annual premium for an assurance of £1 on two lives aged 53 and 18, reckoning interest at 3 per cent.?

By column 3 per cent. in Table 2, and opposite to one year, will be found

.970874 the present value of £1 at 3 per cent. due at the end of one year.

And $1 - .970874 = .029126$ = discount of £1 at the same rate for one year.

By column 3 per cent in Table 13, opposite to 53 and 18, will be found,

11.776, the value of an annuity of £1 on the two Joint Lives.

And $.029126 \times 11.776 = .34297$ = the discount of the annuity for one year.

Then $.970874 - .34297 = .62790$ the single premium required, and corresponds with the quantity in column "Single Premium," in Table 16, opposite to ages 53 and 18.

And $\frac{.62790}{1 + 11.776} = \frac{.62790}{12.776} = .04915$ the Annual Premium required, and corresponds with the quantity in column "Annual Premium," in Table 16, opposite to ages 53 and 18.

And in a similar manner, the premiums at all the other ages in the Table were calculated, from which the Premiums, for assurances of any other amount may be readily obtained as shewn in the following examples.

EXAMPLE 2.

Required the Single Premium that would be charged according to Table 16, to effect an assurance of £2000 on two lives, aged 54 and 29?

On reference to the Table in column, headed "Single Premium," and opposite to ages 54 and 29,

will be found .64306, the Single Premium for an assurance of £1 on the two lives, which, multiplied by 2000 gives £1286.12 = £1286 2 5, the Single Premium required.

EXAMPLE 3.

What Annual Premium should be charged for the above assurance?

On reference to Table 16 in column, Annual Premium per £1, and opposite to ages 54 and 29, will be found .05247 which multiplied by 2000 = 104.94 = £104 18 10, the Annual Premium required.

LIFE ASSURANCES.—LAST SURVIVOR.

TABLE XVII.

The quantities in this Table were constructed by the following rules, (see page 42.)

To find the Single Premium:

From the present value of £1 at the given rate of interest due at the end of one year, subtract the discount for one year, of the value of an Annuity of £1 on the last Survivor of the two lives at the same rate of interest.

To find the Annual Premium:

Divide the Single Premium by 1 *plus the value of an annuity on the last survivor.*

EXAMPLE 1.

What Single and Annual Premium should be charged for an assurance of £1 on the last survivor

of two lives aged 46 and 41, reckoning interest at 3 per cent.?

By Table 12, in column 3 per cent. the value of an annuity of £1, on a life aged 46 years is 15.204

Ditto, ditto, 41 ditto.....16.821

Sum = 32.025

By Table 13, in column 3 per cent. the value of an annuity of £1 on two joint lives aged 46 and 41 is..12.488

Difference · · 19.537 = Value of an annuity of £1 on the last survivor, (see page 37).

By Table 2, the present value of £1 at 3 per cent. due at the end of 1 year = .970874 and 1—.970874 = .029126 the discount of £1 at 3 per cent. for one year.

Then .029126 × 19.537 = .56902 the discount for one year of the annuity on the last survivor. And .97087—.56902 = .40185 = the Single Premium required, and corresponds with the quantity in column "Single Premium" in Table 17, opposite to ages 46 and 41.

The Annual Premium, therefore, is equal to $\frac{.40185}{1 + 19.537} = \frac{.40185}{20.537} = .01956$, and corresponds with the quantity in column "Annual Premium per £1," in Table 17, opposite to the ages 46 and 41.

And in a similar manner the Premiums at the other ages in the Table were found, from which the value of an assurance of any other amount may readily be obtained as shewn in the following examples.

EXAMPLE 2.

What Single Premium should be charged for an assurance of £5000 on the last survivor of two lives aged 60 and 50, reckoning interest at 3 per cent.?

By Table 17, opposite to ages 60 and 50, in column "Single Premium per £1," will be found .51671, the single premium for the assurance of £1, on the survivor of the two lives, which, multiplied by 5000, gives £2583.55 = £2583 11 0 the single premium required.

EXAMPLE 3.

What Annual Premium should be charged for the above assurance?

By Table 17, opposite to ages 60 and 50, in column headed "Annual Premium per £1," will be found .03114, the annual premium for the assurance of £1, on the last survivor of the two lives, which, multiplied by 5000 gives £155.70 = £155 14, the annual premium required.

VALUATION OF POLICIES—SINGLE LIVES.

TABLES XVIII & XIX.

Let it be assumed that the Annual Premium upon an assurance is £1.

Then the value of all the future Premiums, where the Annual Premium has just been paid, is evidently equal to the value of an annuity of £1 on the given life.

And where the premium is just due, but not paid, the value is evidently greater by that amount, and is equal to £1 *plus* the value of an annuity of £1 on the given life.

The value of the future premiums, when estimated at any intermediate period between two successive payments, may, therefore, be obtained by deducting the value of £1 on the age of the assured, at the date of the last payment, from the value increased by unity of a similar annuity on the age at the next payment, and adding to the former a part of the difference, proportional to the time elapsed since the last payment became due; and the several values thus obtained are given for each year and month in Table 18.

And the value of the future payments of any other Annual Premium may be obtained by multiplying the quantities in the Table by such Annual Premium.

The quantities in Table 19, show the Single Premium required for an assurance of £1 on each age, from 10 to 70 with interpolated values for months in each year.

And the value for any other amount may be obtained by multiplying the quantities in the Table by such amount.

The Value of a policy at any time is manifestly the difference between the "Single Premium," for the sum assured on the age of the party, at the time the policy is proposed to be valued, and the then value of all the future premiums, expected to be received on such policy.

EXAMPLE 1.

Required the value of a policy of £4000, effected at an annual premium of £100 13 4 = £100.667 on a life aged 39, but now aged 57 years and four months?

By Table 19, in column, headed 4 months, and opposite to 57 years, will be found .64561, the single premium for an assurance of £1 on a life aged 57 years and 4 months.

Then .64561 × 4000 = 2582.4 = Single Premium for an assurance of £4000 on a life aged 57 years and 4 months.

And by Table 18, in column, headed 4 months, and opposite to 57 years, will be found 11.501, the value of the future premiums of £1 per annum, on a life aged 57 years and 4 months.

Then 11.501 × 100.667 = 1157.8 = Value of future Premiums.

And 2582.4—1157.8 = 1424.6 = £1424 12 the value of the policy as required.

EXAMPLE 2.

Required the value of a policy of £3000, effected at an Annual Premium of £68 8 0, = 68.4 on a life aged 36, but now aged 60, upon which the premium is just due, but not paid.

In this case the premium being just due, but not paid, the value of the future premiums will be 11.188,

the quantity in Table 18, opposite to 59 years and 12 months, (*i.e.* unity added to 10.188, the quantity opposite to 60 years of age,) multiplied by 68.4, which gives 765.25.

And by Table 19, the Single Premium for an assurance of £1, on a life aged 60, is .67414, which, multiplied by 3000, is equal to 2022.42.

Then, 2022.42—765.25 = £1257.17 = £1257 3 5 = the present value required.

If the premium in this case had been just paid, the value of the future premiums would be equal to 10.188, the quantity opposite to 60 years of age multiplied by 68.4 = 696.85.

And 2022.42 – 696.85 = 1325.57 = £1325 11 5 = the value required; which, it will be observed, is equal to the above value, *plus* £68 8*s.*, so that the value of a policy, when the premium has just been paid, is equal to the value of the policy upon which the premium is due and not paid, *plus* the payment then made.

If one or more bonuses have been added to a policy, find the value at the present age of the sum assured by the policy, *plus* the amount of such bonuses, and proceed as before.

The value of a policy which had been effected by the payment of a single premium is manifestly equal to the single premium that would be required for an assurance of the same amount at the present age, and may be obtained from Table 19.

TEMPORARY ANNUITIES AND ASSURANCES.

Comparative Advantages of the D, N, and M Method, and the Ordinary Method of Calculating the Values of Annuities and Assurances.

The D and N system was first employed by Mr. Griffith Davies, the Actuary of the Guardian Assurance Company, and the Formulæ used by him are somewhat analagous to those originally pointed out by the late Mr. Barrett.

The following examples will serve to show the superiority of the new method.

EXAMPLE 1.

Required the value of an Annuity of £20 per annum on a life aged 36, to continue 10 years, reckoning interest at 3 per cent.

Rule by the D. and N. columns.

From the quantity in column N at the present age, subtract the quantity in the same column at the advanced age, and divide the difference by the quantity in column D at the present age.

In Table 10, 515312.329 = the quantity in column N, opposite to 36 the present age.

,, 287000.704 ditto, opposite to 46, the advanced age.

228311.625 = difference.

,, 28228.483 = the quantity in column D. opposite to 36 the present age.

then $\frac{228311.625}{28228,483} = 8.088$, the value required.

Rule, by the common method—

From the value of an annuity on the life at the present age, subtract the value of an annuity on the life at the advanced age, multiplied by the present value of £1 at the given rate of interest due at the end of the term for which the annuity is to continue, and by the probability of the life at the present age, surviving that term.

By column, headed 3 per cent. in Table 12 18.255 = present value of an annuity of £1 on a life aged 36.

Do. do. 15.204 = do. do. 46.

By Table 2, in column 3 per cent. opposite 10 years, .744094 = Present value of £1 at 3 per cent. due at the end of 10 years.

By Table 5. $\frac{73526}{81814}$ = Probability of a life aged 36, living 10 years.

Then $15.204 \times .744094 \times \frac{73526}{81814} = 10.167$

And 18.255—10.167 = 8.088 as before.

The rule to find the value of a DEFERRED ANNUITY, by the D and N columns is,

Divide the quantity in column N, at the age the Annuity is to be entered upon by the quantity in column D at the present age.

EXAMPLE 2.

Required the Single Premium for an assurance of £3000 on a life aged 40 for the term of 7 years, reckoning interest at 3 per cent.?

Rule by the D and M columns.

From the quantity in column M at the present age subtract the quantity in the same column at the advanced age, and divide the difference by the quantity in column D at the present age.

In Table 10,	11384.144	= the quantity in column M, opposite to 40, the present age.
"	9732.454	Ditto opposite to 47 the advanced age.
	1651.690	= difference
"	24111,615	= the quantity in column D, opposite to 40, the present age.

Then $\frac{1651.690}{24111.615} = .0685$, which, multiplied by 3000 gives £205.5 = £205 10 0, the single premium required.

Rule by the common method.

From the value of an annuity on the life, at the present age, subtract the value of an annuity on the life at the advanced age, multiplied by the present value of £1, due at the end of the term for which the assurance is to continue, and by the probability of the life surviving that term; and multiply the difference thus

obtained by the discount of £1, for one year; then subtract this product from the present value of £1, due at the end of one year, multiplied by unity minus the product of the probability of the life surviving the term, and the present value of £1, due at the end of the term.

In column 3 per cent

of Table 12.....17.123 = the present value of an annuity of £1 at three per cent. on a life aged 40.

" 14.864 = do. do. 47

In ditto of Table 2, .813092 = the present value of £1, at 3 per cent. due at the end of 7 years

Ditto .970874 = do. do. at the end of 1 year.

And 1—970874 = 029126 = discount of £1 at 3 per cent. for one year.

From Table 5 we obtain $\frac{72582}{78653}$, the probability of a life aged 40 surviving 7 years.

From which we obtain, according to the rule

$$.970874\left\{1-\frac{72582}{78653}\times .813092\right\}-.029126\left\{17.123-\frac{72582}{78653}\times .813092\times 14.864\right\}=$$

$$.24240-.17388=.06852.$$

And $.06852\times 3000=£205.5=£205$ 10 as before.

The rule to find the value of a DEFERRED ASSURANCE by the D and M columns is,

Divide the quantity in column M, at the advanced age, by the quantity in column D at the present age.

The above examples in Temporary Annuities, and Assurances, without exhibiting the length of the operations of the multiplications and divisions, are sufficiently illustrative of the superiority of the D and N method. Other examples, much more striking, might be given, but the subject will be found fully illustrated in the treatise on Annuities and Assurances, by D. Jones, published by the Society for the Diffusion of Useful Knowledge, in which will also be found a very extensive collection of formulæ for all cases involving one and two lives.*

*This Formulæ is contained in No. 7, of the work, price sixpence, which may probably be obtained separately, and as it is printed in octavo, it might with advantage be bound up with the present work.

TABLES.

TABLE I.

COMPOUND INTEREST,

Showing the *Amount* of £1 improved at Compound Interest, for any number of years not exceeding 100.

Years.	1 ℔ Cent.	1½ ℔ Cent.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent.
1	1.010000	1.015000	1.020000	1.025000	1.030000	1.035000
2	1.020100	1.030225	1.040400	1.050625	1.060900	1.071225
3	1.030301	1.045678	1.061208	1.076891	1.092727	1.108718
4	1.040604	1.061363	1.082432	1.103813	1.125509	1.147523
5	1.051010	1.077284	1.104081	1.131408	1.159274	1.187686
6	1.061520	1.093444	1.126162	1.159693	1.194052	1.229255
7	1.072135	1.109845	1.148686	1.188686	1.229874	1.272279
8	1.082856	1.126492	1.171659	1.218403	1.266770	1.316809
9	1.093685	1.143389	1.195093	1.248863	1.304773	1.362897
10	1.104622	1.160540	1.218994	1.280085	1.343916	1.410599
11	1.115668	1.177948	1.243374	1.312087	1.384234	1.459970
12	1.126825	1.195616	1.268242	1.344889	1.425761	1.511069
13	1.138093	1.213550	1.293607	1.378511	1.468534	1.563956
14	1.149474	1.231754	1.319479	1.412974	1.512590	1.618695
15	1.160969	1.250231	1.345868	1.448298	1.557967	1.675349
16	1.172579	1.268984	1.372786	1.484506	1.604706	1.733986
17	1.184305	1.288019	1.400241	1.521618	1.652848	1.794676
18	1.196148	1.307339	1.428246	1.559659	1.702433	1.857489
19	1.208109	1.326948	1.456811	1.598650	1.753506	1.922501
20	1.220190	1.346851	1.485947	1.638616	1.806111	1.989789
21	1.232392	1.367055	1.515666	1.679582	1.860295	2.059431
22	1.244716	1.387562	1.545980	1.721571	1.916103	2.131512
23	1.257163	1.408376	1.576899	1.764611	1.973587	2.206114
24	1 269735	1.429502	1.608437	1.808726	2.032794	2.283328
25	1.282432	1.450945	1.640606	1.853944	2.093778	2.363245
26	1.295256	1.472709	1.673418	1.900293	2.156591	2.445959
27	1.308209	1.494800	1.706886	1.947800	2.221289	2.531567
28	1.321291	1.517222	1.741024	1.996495	2.287928	2.620172
29	1.334504	1.539980	1.775845	2.046407	2.356566	2.711878
30	1.347849	1.563080	1.811362	2.097568	2.427262	2.806794
31	1.361327	1.586527	1.847589	2.150007	2.500080	2.905031
32	1.374940	1.610324	1.884541	2.203757	2.575083	3.006708
33	1.388689	1.634479	1.922231	2.258851	2.652335	3.111942
34	1.402576	1.658997	1.960676	2.315322	2.731905	3.220860
35	1.416602	1.683882	1.999890	2.373205	2.813862	3.333590
36	1.430768	1.709141	2.039887	2.432535	2.898278	3.450266
37	1.445076	1.734777	2.080685	2.493349	2.985227	3.571025
38	1.459527	1.760799	2.122299	2.555682	3.074783	3.696011
39	1.474122	1.787211	2.164745	2.619574	3.167027	3.825372
40	1.488863	1.814019	2.208040	2.685064	3.262038	3.959260
41	1.503752	1.841229	2.252200	2.752190	3.359899	4.097834
42	1.518790	1.868847	2.297244	2.820995	3.460696	4.241258
43	1.533978	1.896879	2.343189	2.891520	3.564517	4.389702
44	1.549318	1.925333	2.390053	2.963808	3.671452	4.543342
45	1.564811	1.954212	2.437854	3.037903	3.781596	4.702359
46	1.580459	1.983525	2.486611	3.113851	3.895044	4.866941
47	1.596264	2.013277	2.536344	3.191697	4.011895	5.037284
48	1.612227	2.043477	2.587070	3.271490	4.132252	5.213589
49	1.628349	2.074129	2.638812	3.353277	4.256219	5.396065
50	1.644632	2.105240	2.691588	3.437109	4.383906	5.584927

TABLE I.

COMPOUND INTEREST,

Showing the *Amount* of £1 improved at Compound Interest, for any number of years not exceeding 100.

Years.	4 ℔ Cent.	4½ ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.	7 ℔ Cent.	8 ℔ Cent.
1	1.040000	1.045000	1.050000	1.060000	1.070000	1.080000
2	1.081600	1.092025	1.102500	1.123600	1.144900	1.166400
3	1.124864	1.141166	1.157625	1.191016	1.225043	1.259712
4	1.169859	1.192519	1.215506	1.262477	1.310796	1.360489
5	1.216653	1.246182	1.276282	1.338226	1.402552	1.469328
6	1.265319	1.302260	1.340096	1.418519	1.500730	1.586874
7	1.315932	1.360862	1.407100	1.503630	1.605781	1.713824
8	1.368569	1.422101	1.477455	1.593848	1.718186	1.850930
9	1.423312	1.486095	1.551328	1.689479	1.838459	1.999005
10	1.480244	1.552969	1.628895	1.790848	1.967151	2.158925
11	1.539454	1.622853	1.710339	1.898299	2.104852	2.331639
12	1.601032	1.695881	1.795856	2.012196	2.252192	2.518170
13	1.665074	1.772196	1.885649	2.132928	2.409845	2.719624
14	1.731676	1.851945	1.979932	2.260904	2.578534	2.937194
15	1.800944	1.935282	2.078928	2.396558	2.759032	3.172169
16	1.872981	2.022370	2.182875	2.540352	2.952164	3.425943
17	1.947901	2.113377	2.292018	2.692773	3.158815	3.700018
18	2.025817	2.208479	2.406619	2.854339	3.379932	3.996020
19	2.106849	2.307860	2.526950	3.025600	3.616528	4.315701
20	2.191123	2.411714	2.653298	3.207135	3.869684	4.660957
21	2.278768	2.520241	2.785963	3.399564	4.140562	5.033834
22	2.369919	2.633652	2.925261	3.603537	4.430402	5.436540
23	2.464716	2.752166	3.071524	3.819750	4.740530	5.871464
24	2.563304	2.876014	3.225100	4.048935	5.072367	6.341181
25	2.665836	3.005434	3.386355	4.291871	5.427433	6.848475
26	2.772470	3.140679	3.555673	4.549383	5.807353	7.396353
27	2.883369	3.282010	3.733456	4.822346	6.213868	7.988061
28	2.998703	3.429700	3.920129	5.111687	6.648838	8.627106
29	3.118651	3.584036	4.116136	5.418388	7.114257	9.317275
30	3.243398	3.745318	4.321942	5.743491	7.612255	10.062657
31	3.373133	3.913857	4.538039	6.088101	8.145113	10.867669
32	3.508059	4.089981	4.764941	6.453387	8.715271	11.737083
33	3.648381	4.274030	5.003189	6.840590	9.325340	12.676050
34	3.794316	4.466362	5.253348	7.251025	9.978114	13.690134
35	3.946089	4.667348	5.516015	7.686087	10.676581	14.785344
36	4.103933	4.877378	5.791816	8.147252	11.423942	15.968172
37	4.268090	5.096860	6.081407	8.636087	12.223618	17.245626
38	4.438813	5.326219	6.385477	9.154252	13.079271	18.625276
39	4.616366	5.565899	6.704751	9.703507	13.994820	20.115298
40	4.801021	5.816365	7.039989	10.285718	14.974458	21.724522
41	4.993061	6.078101	7.391988	10.902861	16.022670	23.462483
42	5.192784	6.351615	7.761588	11.557033	17.144257	25.339482
43	5.400495	6.637438	8.149667	12.250455	18.344355	27.366640
44	5.616515	6.936123	8.557150	12.985482	19.628460	29.555972
45	5.841176	7.248248	8.985008	13.764611	21.002452	31.920449
46	6.074823	7.574420	9.434258	14.590487	22.472623	34.474085
47	6.317816	7.915268	9.905971	15.465917	24.045707	37.232012
48	6.570528	8.271456	10.401270	16.393872	25.728907	40.210573
49	6.833349	8.643671	10.921333	17.377504	27.529930	43.427419
50	7.106683	9.032636	11.467400	18.420154	29.457025	46.901613

TABLE I.

COMPOUND INTEREST,

Showing the *Amount* of £1 improved at Compound Interest, for any number of years not exceeding 100.

Years.	1 ℔ Cent.	1½ ℔ Cent.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent.
51	1.661078	2.136818	2.745420	3.523036	4.515423	5.780399
52	1.677689	2.168870	2.800328	3.611112	4.650886	5.982713
53	1.694466	2.201404	2.856335	3.701390	4.790412	6.192108
54	1.711411	2.234425	2.913461	3.793925	4.934125	6.408832
55	1.728525	2.267946	2.971731	3.888773	5.082149	6.633141
56	1.745810	2.301964	3.031165	3.985992	5.234613	6.865301
57	1.763268	2.336494	3.091789	4.085642	5.391651	7.105587
58	1.780901	2.371541	3.153624	4.187783	5.553401	7.354282
59	1.798710	2.407114	3.216697	4.292478	5.720003	7.611682
60	1.816697	2.443220	3.281031	4.399790	5.891603	7.878091
61	1.834864	2.479868	3.346651	4.509784	6.068351	8.153824
62	1.853213	2.517067	3.413584	4.622529	6.250402	8.439208
63	1.871745	2.554823	3.481856	4.738092	6.437914	8.734580
64	1.890462	2.593145	3.551493	4.856545	6.631051	9.040291
65	1.909367	2.632042	3.622523	4.977958	6.829983	9.356701
66	1.928461	2.671522	3.694974	5.102407	7.034882	9.684185
67	1.947746	2.711594	3.768873	5.229967	7.245929	10.023132
68	1.967223	2.752267	3.844251	5.360717	7.463307	10.373941
69	1.986895	2.793550	3.921136	5.494734	7.687206	10.737029
70	2.006764	2.835454	3.999558	5.632103	7.917822	11.112825
71	2.026832	2.877986	4.079549	5.772905	8.155357	11.501774
72	2.047100	2.921156	4.161140	5.917228	8.400017	11.904336
73	2.067571	2.964974	4.244363	6.065159	8.652018	12.320988
74	2.088247	3.009449	4.329250	6.216788	8.911578	12.752223
75	2.109129	3.054590	4.415835	6.372207	9.178926	13.198550
76	2.130220	3.100409	4.504152	6.531513	9.454293	13.660500
77	2.151522	3.146913	4.594235	6.694800	9.737922	14.138617
78	2.173037	3.194117	4.686120	6.862170	10.030060	14.633469
79	2.194767	3.242029	4.779842	7.033725	10.330962	15.145640
80	2.216715	3.290659	4.875439	7.209568	10.640891	15.675738
81	2.238882	3.340020	4.972948	7.389807	10.960117	16.224388
82	2.261271	3.390120	5.072407	7.574552	11.288921	16.792242
83	2.283884	3.440971	5.173855	7.763916	11.627588	17.379970
84	2.306723	3.492586	5.277332	7.958014	11.976416	17.988269
85	2.329790	3.544975	5.382879	8.156964	12.335709	18.617859
86	2.353088	3.598150	5.490536	8.360888	12.705780	19.269484
87	2.376619	3.652123	5.600347	8.569911	13.086953	19.943916
88	2.400385	3.706905	5.712354	8.784158	13.479562	20.641953
89	2.424389	3.762509	5.826601	9.003762	13.883949	21.364421
90	2.448633	3.818947	5.943133	9.228856	14.300467	22.112176
91	2.473119	3.876231	6.061996	9.459578	14.729481	22.886102
92	2.497850	3.934374	6.183236	9.696067	15.171366	23.687116
93	2.522828	3.993390	6.306900	9.938469	15.626507	24.516165
94	2.548056	4.053291	6.433038	10.186931	16.095302	25.374230
95	2.573537	4.114090	6.561699	10.441604	16.578161	26.262329
96	2.599272	4.175800	6.692933	10.702644	17.075506	27.181510
97	2.625265	4.238437	6.826792	10.970210	17.587771	28.132863
98	2.651518	4.302013	6.963328	11.244465	18.115404	29.117513
99	2.678033	4.366543	7.102594	11.525577	18.658866	30.136626
100	2.704813	4.432041	7.244646	11.813716	19.218632	31.191408

TABLE I.

COMPOUND INTEREST,

Showing the *Amount* of £1 improved at Compound Interest, for any number of years not exceeding 100.

Years	4 ℔ Cent.	4½ ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.	7 ℔ Cent.	8 ℔ Cent.
51	7.390951	9.439105	12.040770	19.525364	31.519017	50 653742
52	7.686589	9.863865	12.642808	20.696885	33.725348	54 706041
53	7.994052	10.307739	13.274949	21.938698	36.086122	59 082524
54	8.313814	10.771587	13.938696	23.255020	38.612151	63 809126
55	8.646367	11.256308	14.635631	24.650322	41.315001	68 913856
56	8.992222	11.762842	15.367412	26.129341	44.207052	74.426965
57	9.351910	12.292170	16.135783	27.697101	47.301545	80.381122
58	9.725987	12.845318	16.942572	29.358927	50.612653	86.811612
59	10.115026	13.423357	17.789701	31.120463	54.155539	93.756540
60	10.519627	14.027408	18.679186	32.987691	57.946427	101.257064
61	10.940413	14.658641	19.613145	34.966952	62.002677	109.357629
62	11.378029	15.318280	20.593802	37.064969	66.342864	118.106239
63	11.833150	16.007603	21.623493	39.288868	70.986865	127.554738
64	12.306476	16.727945	22.704667	41.646200	75.955945	137.759117
65	12.798735	17.480702	23.839901	44.144972	81.272861	148.779847
66	13·310685	18.267334	25.031896	46.793670	86.961962	160.682234
67	13.843112	19.089364	26.283490	49.601290	93.049299	173.536813
68	14.396836	19.948385	27.597665	52.577368	99.562750	187.419758
69	14.972710	20.846063	28.977548	55.732010	106.532142	202.413339
70	15.571618	21.784136	30.426426	59.075930	113.989392	218.606406
71	16.194483	22.764422	31.947747	62.620486	121.968650	236.094918
72	16.842262	23.788821	33.545134	66.377715	130.506455	254.982512
73	17.515953	24.859318	35.222391	70.360378	139.641907	275.381113
74	18.216591	25.977987	36.983510	74.582001	149.416840	297.411602
75	18.945255	27.146996	38.832686	79.056921	159.876019	321.204530
76	19.703065	28.368611	40.774320	83.800336	171.067341	346.900892
77	20.491187	29.645199	42.813036	88.828356	183.042054	374.652964
78	21.310835	30.979233	44.953688	94.158058	195.854998	404.625201
79	22.163268	32.373298	47.201372	99.807541	209.564848	436.995217
80	23.049799	33.830096	49.561441	105.795993	224.234388	471.954834
81	23.971791	35.352451	52.039513	112.143753	239.930795	509.711221
82	24.930663	36.943311	54.641489	118.872378	256.725950	550.488119
83	25.927889	38.605760	57.373563	126.004721	274.696767	594.527168
84	26.965005	40.343019	60.242241	133.565004	293.925541	642.089342
85	28.043605	42.158455	63.254353	141.578904	314.500328	693.456489
86	29.165349	44.055586	66.417071	150.073639	336.515351	748.933008
87	30.331963	46.038087	69.737925	159.078057	360.071426	808.847649
88	31.545242	48.109801	73.224821	168.622740	385.276426	873.555461
89	32.807051	50.274742	76.886062	178.740105	412.245776	943.439897
90	34.119333	52.537105	80.730365	189.464511	441.102980	1018.91509
91	35.484107	54.901275	84.766883	200.832382	471.980188	1100.42830
92	36.903471	57.371832	89.005227	212.882325	505.018802	1188.46256
93	38.379610	59.953565	93.455489	225.655264	540.370118	1283.53956
94	39.914794	62.651475	98.128263	239.194580	578.196026	1386.22273
95	41.511386	65.470792	103.034676	253.546255	618.669748	1497.12055
96	43.171841	68.416977	108.186410	268.759030	661.976630	1616.89019
97	44.898715	71.495741	113.595731	284.884572	708.314994	1746.24141
98	46.694664	74.713050	119.275517	301.977646	757.897044	1885.94072
99	48.562450	78.075137	125.239293	320.096305	810.949837	2036.81598
100	50.504948	81.588518	131.501258	339.302084	867.716326	2199.76126

TABLE II,

DEFERRED SUMS CERTAIN,

Showing the *Present Value* of £1 to be received at the end of any number of years not exceeding 100.

Years.	1 ℔ Cent.	1½ ℔ Cent.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent.
1	.990099	.985222	.980392	.975610	.970874	.966184
2	.980296	.970662	.961169	.951814	.942596	.933511
3	.970590	.956317	.942322	.928599	.915142	.901943
4	.960980	.942184	.923845	.905951	.888487	.871442
5	.951466	.928260	.905731	.883854	.862609	.841973
6	.942045	.914542	.887971	.862297	.837484	.813501
7	.932718	.901027	.870560	.841265	.813092	.785991
8	.923483	.887711	.853490	.820747	.789409	.759412
9	.914340	.874592	.836755	.800728	.766417	.733731
10	.905287	.861667	.820348	.781198	.744094	.708919
11	.896324	.848933	.804263	.762145	.722421	.684946
12	.887449	.836387	.788493	.743556	.701380	.661783
13	.878662	.824027	.773033	.725420	.680951	.639404
14	.869963	.811849	.757875	.707727	.661118	.617782
15	.861349	.799852	.743015	.690466	.641862	.596891
16	.852821	.788031	.728446	.673625	.623167	.576706
17	.844377	.776385	.714163	.657195	.605016	.557204
18	.836017	.764912	.700159	.641166	.587395	.538361
19	.827740	.753607	.686431	.625528	.570286	.520156
20	.819544	.742471	.672971	.610271	.553676	.502566
21	.811430	.731498	.659776	.595386	.537549	.485571
22	.803396	.720687	.646839	.580865	.521893	.469151
23	.795442	.710037	.634156	.566697	.506692	.453286
24	.787566	.699544	.621721	.552875	.491934	.437957
25	.779768	.689206	.609531	.539391	.477606	.423147
26	.772048	.679020	.597579	.526235	.463695	.408838
27	.764404	.668986	.585862	.513400	.450189	.395012
28	.756836	.659099	.574375	.500878	.437077	.381654
29	.749342	.649359	.563112	.488661	.424346	.368748
30	.741923	.639762	.552071	.476743	.411987	.356278
31	.734577	.630308	.541246	.465115	.399987	.344230
32	.727304	.620994	.530633	.453771	.388337	.332590
33	.720103	.611816	.520229	.442703	.377026	.321343
34	.712973	.602774	.510028	.431905	.366045	.310476
35	.705914	.593866	.500028	.421371	.355383	.299977
36	.698925	.585090	.490223	.411094	.345032	.289833
37	.692005	.576443	.480611	.401067	.334983	.280032
38	.685153	.567924	.471187	.391285	.325226	.270562
39	.678370	.559531	.461948	.381741	.315754	.261413
40	.671653	.551262	.452890	.372431	.306557	.252572
41	.665003	.543116	.444010	.363347	.297628	.244031
42	.658419	.535089	.435304	.354485	.288959	.235779
43	.651900	.527182	.426769	.345839	.280543	.227806
44	.645445	.519391	.418401	.337404	.272372	.220102
45	.639055	.511715	.410197	.329174	.264439	.212659
46	.632728	.504153	.402154	.321146	.256737	.205468
47	.626463	.496702	.394268	.313313	.249259	.198520
48	.620260	.489362	.386538	.305671	.241999	.191806
49	.614119	.482130	.378958	.298216	.234950	.185320
50	.608039	.475005	.371528	.290942	.228107	.179053

TABLE II.

DEFERRED SUMS CERTAIN,

Showing the *Present Value* of £1 to be received at the end of any number of years not exceeding 100.

Years.	4 ℔ Cent.	4½ ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.	7 ℔ Cent.	8 ℔ Cent.
1	.961538	.956938	.952381	.943396	.934579	.925926
2	.924556	.915730	.907029	.889996	.873439	.857339
3	.888996	.876297	.863838	.839619	.816298	.793832
4	.854804	.838561	.822702	.792094	.762895	.735030
5	.821927	.802451	.783526	.747258	.712986	.680583
6	.790315	.767896	.746215	.704961	.666342	.630170
7	.759918	.734828	.710681	.665057	.622750	.583490
8	.730690	.703185	.676839	.627412	.582009	.540269
9	.702587	.672904	.644609	.591898	.543934	.500249
10	.675564	.643928	.613913	.558395	.508349	.463193
11	.649581	.616199	.584679	.526788	.475093	.428883
12	.624597	.589664	.556837	.496969	.444012	.397114
13	.600574	.564272	.530321	.468839	.414964	.367698
14	.577475	.539973	.505068	.442301	.387817	.340461
15	.555265	.516720	.481017	.417265	.362446	.315242
16	.533908	.494469	.458112	.393646	.338735	.291890
17	.513373	.473176	.436297	.371364	.316574	.270269
18	.493628	.452800	.415521	.350344	.295864	.250249
19	.474642	.433302	.395734	.330513	.276508	.231712
20	.456387	.414643	.376889	.311805	.258419	.214548
21	.438834	.396787	.358942	.294155	.241513	.198656
22	.421955	.379701	.341850	.277505	.225713	.183941
23	.405726	.363350	.325571	.261797	.210947	.170315
24	.390121	.347703	.310068	.246979	.197147	.157699
25	.375117	.332731	.295303	.232999	.184249	.146018
26	.360689	.318402	.281241	.219810	.172195	.135202
27	.346817	.304691	.267848	.207368	.160930	.125187
28	.333477	.291571	.255094	.195630	.150402	.115914
29	.320651	.279015	.242946	.184557	.140563	.107328
30	.308319	.267000	.231377	.174110	.131367	.099377
31	.296460	.255502	.220359	.164255	.122773	.092016
32	.285058	.244500	.209866	.154957	.114741	.085200
33	.274094	.233971	.199873	.146186	.107235	.078889
34	.263552	.223896	.190355	.137912	.100219	.073045
35	.253415	.214254	.181290	.130105	.093663	.067635
36	.243669	.205028	.172657	.122741	.087535	.062625
37	.234297	.196199	.164436	.115793	.081809	.057986
38	.225285	.187750	.156605	.109239	.076457	.053690
39	.216621	.179665	.149148	.103056	.071455	.049713
40	.208289	.171929	.142046	.097222	.066780	.046031
41	.200278	.164525	.135282	.091719	.062412	.042621
42	.192575	.157440	.128840	.086527	.058329	.039464
43	.185168	.150661	.122704	.081630	.054513	.036541
44	.178046	.144173	.116861	.077009	.050946	.033834
45	.171198	.137964	.111297	.072650	.047613	.031328
46	.164614	.132023	.105997	.068538	.044499	.029007
47	.158283	.126338	.100949	.064658	.041587	.026859
48	.152195	.120898	.096142	.060998	.038867	.024869
49	.146341	.115692	.091564	.057546	.036324	.023027
50	.140713	.110710	.087204	.054288	.033948	.021321

TABLE II.

DEFERRED SUMS CERTAIN,

Showing the *Present Value* of £1 to be received at the end of any number of years not exceeding 100.

Years.	1 ℔ Cent.	1½ ℔ Cent.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent
51	.602019	.46798[5]	.364243	.283846	.221463	.172998
52	.596058	.461069	.357101	.276923	.215013	.167148
53	.590156	.454255	.350099	.270169	.208750	.161496
54	.584313	.447542	.343234	.263579	.202670	.156035
55	.578528	.440928	.336504	.257151	.196767	.150758
56	.572800	.434412	.329906	.250879	.191036	.145660
57	.567129	.427992	.323437	.244760	.185472	.140734
58	.561514	.421661	.317095	.238790	.180070	.135975
59	.555954	.415435	.310878	.232966	.174825	.131377
60	.550450	.409296	.304782	.227284	.169733	.126934
61	.545000	.403247	.298806	.221740	.164789	.122642
62	.539604	.397288	.292947	.216332	.159990	.118495
63	.534261	.391417	.287203	.211055	.155330	.114487
64	.528971	.385632	.281572	.205908	.150806	.110616
65	.523734	.379933	.276051	.200886	.146413	.106875
66	.518548	.374318	.270638	.195986	.142149	.103261
67	.513414	.368787	.265331	.191206	.138009	.099769
68	.508331	.363337	.260129	.186542	.133989	.096395
69	.503298	.357967	.255028	.181992	.130086	.093136
70	.498315	.352677	.250028	.177554	.126297	.089986
71	.493381	.347465	.245125	.173223	.122619	.086943
72	.488496	.342330	.240319	.168998	.119047	.084003
73	.483659	.337271	.235607	.164876	.115580	.081162
74	.478871	.332287	.230987	.160855	.112214	.078418
75	.474130	.327376	.226458	.156931	.108945	.075766
76	.469435	.322538	.222017	.153104	.105772	.073204
77	.464787	.317771	.217664	.149370	.102691	.070728
78	.460185	.313075	.213396	.145726	.099700	.068337
79	.455629	.308449	.209212	.142172	.096796	.066026
80	.451118	.303890	.205110	.138705	.093977	.063793
81	.446651	.299399	.201088	.135322	.091240	.061636
82	.442229	.294975	.197145	.132021	.088582	.059551
83	.437851	.290616	.193279	.128801	.086002	.057538
84	.433516	.286321	.189490	.125659	.083497	.055592
85	.429223	.282089	.185774	.122595	.081065	.053712
86	.424973	.277920	.182132	.119605	.078704	.051896
87	.420766	.273813	.178560	.116687	.076412	.050141
88	.416600	.269767	.175059	.113841	.074186	.048445
89	.412475	.265780	.171627	.111065	.072026	.046807
90	.408391	.261852	.168261	.108356	.069928	.045224
91	.404348	.257983	.164962	.105713	.067891	.043695
92	.400344	.254170	.161728	.103135	.065914	.042217
93	.396380	.250414	.158556	.100619	.063994	.040789
94	.392456	.246713	.155448	.098165	.062130	.039410
95	.388570	.243067	.152400	.095771	.060320	.038077
96	.384723	.239475	.149411	.093435	.058563	.036790
97	.380914	.235936	.146482	.091156	.056858	.035546
98	.377142	.232449	.143610	.088933	.055202	.034344
99	.373408	.229014	.140794	.086764	.053594	.033182
100	.369711	.225629	.138033	.084647	.052033	.032060

TABLE II.

DEFERRED SUMS CERTAIN,

Showing the *Present Value* of £1 to be received at the end of any number of years not exceeding 100.

Years.	4 ℔ Cent.	4½ ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.	7 ℔ Cent.	8 ℔ Cent.
51	.135301	.105942	.083051	.051215	.031727	.019742
52	.130097	.101380	.079096	.048316	.029651	.018280
53	.125093	.097014	.075330	.045582	.027711	.016925
54	.120282	.092837	.071743	.043001	.025899	.015672
55	.115656	.088839	.068326	.040567	.024204	.014511
56	.111207	.085013	.065073	.038271	.022621	.013436
57	.106930	.081353	.061974	.036105	.021141	.012441
58	.102817	.077849	.059023	.034061	.019758	.011519
59	.098863	.074497	.056212	.032133	.018465	.010666
60	.095060	.071289	.053536	.030314	.017257	.009876
61	.091404	.068219	.050986	.028598	.016128	.009144
62	.087889	.065281	.048558	.026980	.015073	.008467
63	.084508	.062470	.046246	.025453	.014087	.007840
64	.081258	.059780	.044044	.024012	.013166	.007259
65	.078133	.057206	.041946	.022653	.012304	.006721
66	.075128	.054743	.039949	.021370	.011499	.006223
67	.072238	.052385	.038047	.020161	.010747	.005762
68	.069460	.050129	.036235	.019020	.010044	.005336
69	.066788	.047971	.034509	.017943	.009387	.004940
70	.064219	.045905	.032866	.016927	.008773	.004574
71	.061749	.043928	.031301	.015969	.008199	.004236
72	.059374	.042037	.029811	.015065	.007662	.003922
73	.057091	.040226	.028391	.014213	.007161	.003631
74	.054895	.038494	.027039	.013408	.006693	.003362
75	.052784	.036836	.025752	.012649	.006255	.003113
76	.050754	.035250	.024525	.011933	.005846	.002883
77	.048801	.033732	.023357	.011258	.005463	.002669
78	.046924	.032280	.022245	.010620	.005106	.002471
79	.045120	.030890	.021186	.010019	.004772	.002288
80	.043384	.029559	.020177	.009452	.004460	.002119
81	.041716	.028287	.019216	.008917	.004168	.001962
82	.040111	.027069	.018301	.008412	.003895	.001817
83	.038569	.025903	.017430	.007936	.003640	.001682
84	.037085	.024787	.016600	.007487	.003402	.001557
85	.035659	.023720	.015809	.007063	.003180	.001442
86	.034287	.022699	.015056	.006663	.002972	.001335
87	.032969	.021721	.014339	.006286	.002777	.001236
88	.031701	.020786	.013657	.005930	.002596	.001145
89	.030481	.019891	.013006	.005595	.002426	.001060
90	.029309	.019034	.012387	.005278	.002267	.000981
91	.028182	.018215	.011797	.004979	.002119	.000909
92	.027098	.017430	.011235	.004697	.001980	.000841
93	.026056	.016680	.010700	.004432	.001851	.000779
94	.025053	.015961	.010191	.004181	.001730	.000721
95	.024090	.015274	.009705	.003944	.001616	.000668
96	.023163	.014616	.009243	.003721	.001511	.000618
97	.022272	.013987	.008803	.003510	.001412	.000573
98	.021416	.013385	.008384	.003312	.001319	.000530
99	.020592	.012808	.007985	.003124	.001233	.000491
100	.019800	.012257	.007604	.002947	.001152	.000455

TABLE III.

ANNUITIES CERTAIN--AMOUNTS,

Showing the *Amount* of £1 *per Annum* forborn and improved for any number of years not exceeding 100.

Years.	1 ℔ Cent.	1½ ℔ Cent.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent.
1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
2	2.010000	2.015000	2.020000	2.025000	2.030000	2.035000
3	3.030100	3.045225	3.060400	3.075625	3.090900	3.106225
4	4.060401	4.090903	4.121608	4.152516	4.183627	4.214943
5	5.101005	5.152266	5.204040	5.256329	5.309136	5.362466
6	6.152015	6.229550	6.308121	6.387737	6.468410	6.550152
7	7.213535	7.322994	7.434283	7.547430	7.662462	7.779408
8	8.285670	8.432839	8.582969	8.736116	8.892336	9.051687
9	9.368526	9.559331	9.754628	9.954519	10.159106	10.368496
10	10.462211	10.702720	10.949721	11.203382	11.463879	11.731393
11	11.566833	11.863260	12.168715	12.483466	12.807796	13.141992
12	12.682501	13.041208	13.412090	13.795553	14.192030	14.601962
13	13.809326	14.236824	14.680332	15.140442	15.617790	16.113030
14	14.947419	15.450374	15.973938	16.518953	17.086324	17.676986
15	16.096893	16.682128	17.293417	17.931927	18.598914	19.295681
16	17.257862	17.932359	18.639285	19.380225	20.156881	20.971030
17	18.430441	19.201343	20.012071	20.864730	21.761588	22.705016
18	19.614746	20.489362	21.412312	22.386349	23.414435	24.499691
19	20.810894	21.796701	22.840559	23.946007	25.116868	26.357181
20	22.019003	23.123649	24.297370	25.544658	26.870374	28.279682
21	23.239193	24.470500	25.783317	27.183274	28.676486	30.269471
22	24.471585	25.837555	27.298984	28.862856	30.536780	32.328902
23	25.716301	27.225117	28.844963	30.584427	32.452884	34.460414
24	26.973464	28.633493	30.421862	32.349038	34.426470	36.666528
25	28.243199	30.062995	32.030300	34.157764	36.459264	38.949857
26	29.525631	31.513940	33.670906	36.011708	38.553042	41.313102
27	30.820887	32.986649	35.344324	37.912001	40.709634	43.759060
28	32.129096	34.481449	37.051210	39.859801	42.930923	46.290627
29	33.450387	35.998671	38.792235	41.856296	45.218850	48.910799
30	34.784891	37.538651	40.568079	43.902703	47.575416	51.622677
31	36.132740	39.101731	42.379441	46.000271	50.002678	54.429471
32	37.494067	40.688258	44.227030	48.150278	52.502759	57.334502
33	38.869007	42.298582	46.111570	50.354034	55.077841	60.341210
34	40.257696	43.933061	48.033802	52.612885	57.730177	63.453152
35	41.660272	45.592058	49.994478	54.928207	60.462082	66.674013
36	43.076874	47.275940	51.994367	57.301413	63.275944	70.007603
37	44.507642	48.985081	54.034255	59.733948	66.174223	73.457869
38	45.952718	50.719858	56.114940	62.227297	69.159449	77.028895
39	47.412245	52.480657	58.237238	64.782979	72.234233	80.724906
40	48.886367	54.267868	60.401983	67.402554	75.401260	84.550278
41	50.375230	56.081887	62.610023	70.087617	78.663298	88.509537
42	51.878982	57.923116	64.862223	72.839808	82.023196	92.607371
43	53.397772	59.791963	67.159468	75.660803	85.483892	96.848629
44	54.931750	61.688842	69.502657	78.552323	89.048409	101.23833
45	56.481068	63.614175	71.892710	81.516131	92.719861	105.78167
46	58.045879	65.568387	74.330564	84.554034	96.501457	110.48403
47	59.626338	67.551912	76.817176	87.667885	100.39650	115.35097
48	61.222602	69.565189	79.353519	90.859582	104.40840	120.38826
49	62.834829	71.608666	81.940590	94.131072	108.54065	125.60185
50	64.463178	73.682795	84.579401	97.484349	112.79687	130.99791

TABLE III.

ANNUITIES CERTAIN—AMOUNTS,

Showing the *Amount* of £1 *per Annum* forborn and improved for any number of years not exceeding 100.

Years.	4 ℔ Cent.	4½ ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.	7 ℔ Cent.	8 ℔ Cent.
1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
2	2.040000	2.045000	2.050000	2.060000	2.070000	2.080000
3	3.121600	3.137025	3.152500	3.183600	3.214900	3.246400
4	4.246464	4.278191	4.310125	4.374616	4.439943	4.506112
5	5.416323	5.470710	5.525631	5.637093	5.750739	5.866601
6	6.632975	6.716892	6.801913	6.975319	7.153291	7.335929
7	7.898294	8.019152	8.142008	8.393838	8.654021	8.922803
8	9.214226	9.380014	9.549109	9.897468	10.259803	10.636628
9	10.582795	10.802114	11.026564	11.491316	11.977989	12.487558
10	12.006107	12.288209	12.577893	13.180795	13.816448	14.486562
11	13.486351	13.841179	14.206787	14.971643	15.783599	16.645487
12	15.025805	15.464032	15.917127	16.869941	17.888451	18.977126
13	16.626838	17.159913	17.712983	18.882138	20.140643	21.495297
14	18.291911	18.932109	19.598632	21.015066	22.550488	24.214920
15	20.023588	20.784054	21.578564	23.275970	25.129022	27.152114
16	21.824531	22.719337	23.657492	25.672528	27.888054	30.324283
17	23.697512	24.741707	25.840366	28.212880	30.840217	33.750226
18	25.645413	26.855084	28.132385	30.905653	33.999033	37.450244
19	27.671229	29.063562	30.539004	33.759992	37.378965	41.446263
20	29.778079	31.371423	33.065954	36.785591	40.995492	45.761964
21	31.969202	33.783137	35.719252	39.992727	44.865177	50.422921
22	34.247970	36.303378	38.505214	43.392290	49.005739	55.456755
23	36.617889	38.937030	41.430475	46.995828	53.436141	60.893296
24	39.082604	41.689196	44.501999	50.815577	58.176671	66.764759
25	41.645908	44.565210	47.727099	54.864512	63.249038	73.105940
26	44.311745	47.570645	51.113454	59.156383	68.676470	79.954415
27	47.084214	50.711324	54.669126	63.705766	74.483823	87.350768
28	49.967583	53.993333	58.402583	68.528112	80.697691	95.338830
29	52.966286	57.423033	62.322712	73.639798	87.346529	103.96594
30	56.084938	61.007070	66.438848	79.058186	94.460786	113.28321
31	59.328335	64.752388	70.760790	84.801677	102.07304	123.34587
32	62.701469	68.666245	75.298829	90.889778	110.21815	134.21354
33	66.209527	72.756226	80.063771	97.343165	118.93343	145.95062
34	69.857909	77.030256	85.066959	104.18376	128.25877	158.62667
35	73.652225	81.496618	90.320307	111.43478	138.23688	172.31680
36	77.598314	86.163966	95.836323	119.12087	148.91346	187.10215
37	81.702246	91.041344	101.62814	127.26812	160.33740	203.07032
38	85.970336	96.138205	107.70955	135.90421	172.56102	220.31595
39	90.409150	101.46442	114.09502	145.05846	185.64029	238.94122
40	95.025516	107.03032	120.79977	154.76197	199.63511	259.05652
41	99.826536	112.84669	127.83976	165.04768	214.60957	280.78104
42	104.81960	118.92479	135.23175	175.95055	230.63224	304.24352
43	110.01238	125.27640	142.99334	187.50758	247.77650	329.58301
44	115.41288	131.91384	151.14301	199.75803	266.12085	356.94965
45	121.02939	138.84997	159.70016	212.74351	285.74931	386.50562
46	126.87057	146.09821	168.68516	226.50812	306.75176	418.42607
47	132.94539	153.67263	178.11942	241.09861	329.22439	452.90015
48	139.26321	161.58790	188.02539	256.56453	353.27009	490.13216
49	145.83373	169.85936	198.42666	272.95840	378.99900	530.34274
50	152.66708	178.50303	209.34800	290.33590	406.52893	573.77016

TABLE III.

ANNUITIES CERTAIN—AMOUNTS,

Showing the *Amount* of £1 *per Annum* forborn and improved for any number of years not exceeding 100.

Years.	1 ℔ Cent.	1½ ℔ Cent.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent.
51	66.107810	75.788035	87.270989	100.92146	117.18077	136.58284
52	67.768888	77.924853	90.016409	104.44449	121.69620	142.36324
53	69.446577	80.093723	92.816737	108.05561	126.34708	148.34595
54	71.141043	82.295127	95.673072	111.75700	131.13749	154.53806
55	72.852454	84.529552	98.586534	115.55092	136.07162	160.94689
56	74.580979	86.797498	101.55826	119.43969	141.15377	167.58003
57	76.326789	89.099462	104.58943	123.42569	146.38838	174.44533
58	78.090057	91.435956	107.68122	127.51133	151.78003	181.55092
59	79.870958	93.807497	110.83484	131.69911	157.33343	188.90520
60	81.669668	96.214611	114.05154	135.99159	163.05344	196.51688
61	83.486365	98.657831	117.33257	140.39138	168.94504	204.39497
62	85.321229	101.13770	120.67922	144.90116	175.01339	212.54880
63	87.174442	103.65477	124.09281	149.52369	181.26379	220.98801
64	89.046187	106.20959	127.57466	154.26179	187.70171	229.72259
65	90.936649	108.80273	131.12616	159.11833	194.33276	238.76288
66	92.846016	111.43478	134.74868	164.09629	201.16274	248.11958
67	94.774477	114.10630	138.44365	169.19870	208.19762	257.80376
68	96.722223	116.81789	142.21253	174.42866	215.44355	267.82689
69	98.689446	119.57016	146.05678	179.78938	222.90686	278.20084
70	100.67634	122.36371	149.97791	185.28411	230.59406	288.93786
71	102.68311	125.19916	153.97747	190.91622	238.51189	300.05069
72	104.70994	128.07715	158.05702	196.68912	246.66724	311.55246
73	106.75704	130.99831	162.21816	202.60635	255.06726	323.45680
74	108.82461	133.96328	166.46252	208.67151	263.71928	335.77779
75	110.91286	136.97273	170.79177	214.88830	272.63086	348.53001
76	113.02198	140.02732	175.20761	221.26050	281.80978	361.72856
77	115.15220	143.12773	179.71176	227.79202	291.26407	375.38906
78	117.30373	146.27464	184.30600	234.48682	301.00200	389.52768
79	119.47676	149.46876	188.99212	241.34899	311.03206	404.16115
80	121.67153	152.71079	193.77196	248.38271	321.36302	419.30679
81	123.88825	156.00145	198.64740	255.59228	332.00391	434.98252
82	126.12713	159.34147	203.62034	262.98209	342.96403	451.20691
83	128.38840	162.73159	208.69275	270.55664	354.25295	467.99915
84	130.67228	166.17256	213.86661	278.32056	365.88054	485.37913
85	132.97901	169.66514	219.14394	286.27857	377.85695	503.36739
86	135.30880	173.21012	224.52682	294.43553	390.19266	521.98525
87	137.66188	176.80827	230.01735	302.79642	402.89844	541.25474
88	140.03850	180.46039	235.61770	311.36633	415.98539	561.19865
89	142.43889	184.16730	241.33006	320.15049	429.46496	581.84061
90	144.86328	187.92980	247.15666	329.15425	443.34890	603.20503
91	147.31191	191.74875	253.09979	338.38311	457.64937	625.31720
92	149.78503	195.62498	259.16179	347.84269	472.37885	648.20331
93	152.28288	199.55936	265.34502	357.53875	487.55022	671.89042
94	154.80571	203.55275	271.65192	367.47722	503.17672	696.40659
95	157.35376	207.60604	278.08496	377.66415	519.27203	721.78082
96	159.92730	211.72013	284.64666	388.10576	535.85019	748.04314
97	162.52657	215.89593	291.33959	398.80840	552.92569	775.22465
98	165.15184	220.13436	298.16638	409.77861	570.51346	803.35752
99	167.80335	224.43638	305.12971	421.02308	588.62887	832.47503
100	170.48139	228.80292	312.23231	432.54865	607.28773	862.61166

TABLE III.

ANNUITIES CERTAIN—AMOUNTS,

Showing the *Amount* of £1 *per Annum* forborn and improved for any number of years not exceeding 100.

Years.	4 ℔ Cent.	4½ ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.	7 ℔ Cent.	8 ℔ Cent.
51	159.77377	187.53566	220.81540	308.75606	435.98595	620.67177
52	167.16472	196.97477	232.85617	328.28142	467.50497	671.32551
53	174.85131	206.83863	245.49897	348.97831	501.23032	726.03155
54	182.84536	217.14637	258.77392	370.91701	537.31644	785.11408
55	191.15917	227.91796	272.71262	394.17203	575.92859	848.92320
56	199.80554	239.17427	287.34825	418.82235	617.24359	917.83706
57	208.79776	250.93711	302.71566	444.95169	661.45065	992.26402
58	218.14967	263.22928	318.85144	472.64879	708.75219	1072.6451
59	227.87566	276.07460	335.79402	502.00772	759.36484	1159.4568
60	237.99069	289.49795	353.58372	533.12818	813.52038	1253.2133
61	248.51031	303.52536	372.26290	566.11587	871.46681	1354.4704
62	259.45073	318.18400	391.87605	601.08282	933.46949	1463.8280
63	270.82875	333.50228	412.46985	638.14779	999.81235	1581.9342
64	282.66190	349.50989	434.09334	677.43666	1070.7992	1709.4890
65	294.96838	366.23783	456.79801	719.08286	1146.7552	1847.2481
66	307.76712	383.71853	480.63791	763.22783	1228.0280	1996.0279
67	321.07780	401.98587	505.66981	810.02150	1314.9900	2156.7102
68	334.92091	421.07523	531.95330	859.62279	1408.0393	2330.2470
69	349.31775	441.02362	559.55096	912.20016	1507.6020	2517.6667
70	364.29046	461.86968	588.52851	967.93217	1614.1342	2720.0801
71	379.86208	483.65382	618.95494	1027.0081	1728.1236	2938.6865
72	396.05656	506.41824	650.90268	1089.6286	1850.0922	3174.7814
73	412.89882	530.20706	684.44782	1156.0063	1980.5987	3429.7639
74	430.41478	555.06638	719.67021	1226.3667	2120.2406	3705.1450
75	448.63137	581.04436	756.65372	1300.9487	2269.6574	4002.5566
76	467.57662	608.19136	795.48640	1380.0056	2429.5334	4323.7612
77	487.27969	636.55997	836.26072	1463.8059	2600.6008	4670.6620
78	507.77087	666.20517	879.07376	1552.6343	2783.6428	5045.3150
79	529.08171	697.18440	924.02745	1646.7924	2979.4978	5449.9402
80	551.24498	729.55770	971.22882	1746.5999	3189.0627	5886.9354
81	574.29478	763.38779	1020.7903	1852.3959	3413.2971	6358.8903
82	598.26657	798.74025	1072.8298	1964.5396	3653.2279	6868.6015
83	623.19723	835.68356	1127.4713	2083.4120	3909.9538	7419.0896
84	649.12512	874.28932	1184.8448	2209.4167	4184.6506	8013.6168
85	676.09012	914.63234	1245.0871	2342.9817	4478.5761	8655.7061
86	704.13373	956.79079	1308.3414	2484.5606	4793.0764	9349.1626
87	733.29908	1000.8464	1374.7585	2634.6343	5129.5918	10098.096
88	763.63104	1046.8845	1444.4964	2793.7123	5489.6632	10906.943
89	795.17628	1094.9943	1517.7212	2962.3351	5874.9397	11780.499
90	827.98333	1145.2690	1594.6073	3141.0752	6287.1854	12723.939
91	862.10267	1197.8061	1675.3377	3330.5397	6728.2884	13742.854
92	897.58677	1252.7074	1760.1045	3531.3721	7200.2686	14843.282
93	934.49024	1310.0792	1849.1098	3744.2544	7705.2874	16031.745
94	972.86985	1370.0328	1942.5653	3969.9097	8245.6575	17315.284
95	1012.7846	1432.6843	2040.6935	4209.1042	8823.8535	18701.507
96	1054.2960	1498.1551	2143.7282	4462.6505	9442.5233	20198.627
97	1097.4679	1566.5720	2251.9146	4731.4095	10104.500	21815.518
98	1142.3666	1638.0678	2365.5103	5016.2941	10812.815	23561.759
99	1189.0613	1712.7808	2484.7859	5318.2718	11570.712	25447.700
100	1237.6237	1790.8560	2610.0252	5638.3681	12381.662	27484.516

TABLE IV.

ANNUITIES CERTAIN—PRESENT VALUES,

Showing the *Present Value* of £1 *per Annum* for any number of years not exceeding 100.

Years.	1 ℔ Cent.	1½ ℔ Cent.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent.
1	.990099	.985222	.980392	.975610	.970874	.966184
2	1.970395	1.955884	1.941561	1.927424	1.913470	1.899694
3	2.940985	2.912201	2.883883	2.856024	2.828611	2.801637
4	3.901965	3.854385	3.807729	3.761974	3.717098	3.673079
5	4.853431	4.782645	4.713460	4.645828	4.579707	4.515052
6	5.795476	5.697187	5.601431	5.508125	5.417191	5.328553
7	6.728194	6.598214	6.471991	6.349391	6.230283	6.114544
8	7.651677	7.485925	7.325481	7.170137	7.019692	6.873956
9	8.566017	8.360517	8.162237	7.970866	7.786109	7.607687
10	9.471304	9.222184	8.982585	8.752064	8.530203	8.316605
11	10.367628	10.071117	9.786848	9.514209	9.252624	9.001551
12	11.255077	10.907504	10.575341	10.257765	9.954004	9.663334
13	12.133739	11.731531	11.348374	10.983185	10.634955	10.302738
14	13.003702	12.543380	12.106249	11.690912	11.296073	10.920520
15	13.865051	13.343232	12.849264	12.381378	11.937935	11.517411
16	14.717872	14.131263	13.577709	13.055003	12.561102	12.094117
17	15.562249	14.907648	14.291872	13.712198	13.166118	12.651321
18	16.398266	15.672560	14.992031	14.353364	13.753513	13.189682
19	17.226006	16.426167	15.678462	14.978891	14.323799	13.709837
20	18.045550	17.168638	16.351433	15.589162	14.877475	14.212403
21	18.856980	17.900136	17.011209	16.184549	15.415024	14.697974
22	19.660376	18.620823	17.658048	16.765413	15.936917	15.167125
23	20.455818	19.330860	18.292204	17.332110	16.443608	15.620410
24	21.243384	20.030404	18.913926	17.884986	16.935542	16.058368
25	22.023152	20.719610	19.523456	18.424376	17.413148	16.481515
26	22.795200	21.398630	20.121036	18.950611	17.876842	16.890352
27	23.559604	22.067616	20.706898	19.464011	18.327031	17.285365
28	24.316440	22.726715	21.281272	19.964889	18.764108	17.667019
29	25.065782	23.376074	21.844385	20.453550	19.188455	18.035767
30	25.807705	24.015836	22.396456	20.930293	19.600441	18.392045
31	26.542282	24.646144	22.937702	21.395407	20.000428	18.736276
32	27.269586	25.267138	23.468335	21.849178	20.388766	19.068865
33	27.989689	25.878954	23.988564	22.291881	20.765792	19.390208
34	28.702662	26.481728	24.498592	22.723786	21.131837	19.700684
35	29.408576	27.075594	24.998619	23.145157	21.487220	20.000661
36	30.107501	27.660684	25.488842	23.556251	21.832252	20.290494
37	30.799506	28.237127	25.969453	23.957318	22.167235	20.570525
38	31.484659	28.805051	26.440641	24.348603	22.492462	20.841087
39	32.163029	29.364582	26.902589	24.730344	22.808215	21.102500
40	32.834682	29.915844	27.355479	25.102775	23.114772	21.355072
41	33.499685	30.458960	27.799489	25.466122	23.412400	21.599104
42	34.158104	30.994049	28.234794	25.820607	23.701359	21.834883
43	34.810004	31.521231	28.661562	26.166446	23.981902	22.062689
44	35.455449	32.040622	29.079963	26.503849	24.254274	22.282791
45	36.094504	32.552337	29.490160	26.833024	24.518713	22.495450
46	36.727232	33.056490	29.892314	27.154170	24.775449	22.700918
47	37.353695	33.553192	30.286582	27.467483	25.024708	22.899438
48	37.973955	34.042554	30.673120	27.773154	25.266707	23.091244
49	38.588074	34.524684	31.052078	28.071369	25.501657	23.276564
50	39.196113	34.999689	31.423606	28.362312	25.729764	23.455618

TABLE IV.

ANNUITIES CERTAIN—PRESENT VALUES,

Showing the *Present Value* of £1 *per Annum* for any number of years not exceeding 100.

Years.	4 ℔ Cent.	4½ ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.	7 ℔ Cent.	8 ℔ Cent.
1	.961538	.956938	.952381	.943396	.934579	.925926
2	1.886095	1.872668	1.859410	1.833393	1.808018	1.783265
3	2.775091	2.748964	2.723248	2.673012	2.624316	2.577097
4	3.629895	3.587526	3.545951	3.465106	3.387211	3.312127
5	4.451822	4.389977	4.329477	4.212364	4.100197	3.992710
6	5.242137	5.157872	5.075692	4.917324	4.766540	4.622880
7	6.002055	5.892701	5.786373	5.582381	5.389289	5.206370
8	6.732745	6.595886	6.463213	6.209794	5.971299	5.746639
9	7.435332	7.268790	7.107822	6.801692	6.515232	6.246888
10	8.110896	7.912718	7.721735	7.360087	7.023582	6.710081
11	8.760477	8.528917	8.306414	7.886875	7.498674	7.138964
12	9.385074	9.118581	8.863252	8.383844	7.942686	7.536078
13	9.985648	9.682852	9.393573	8.852683	8.357651	7.903776
14	10.563123	10.222825	9.898641	9.294984	8.745468	8.244237
15	11.118387	10.739546	10.379658	9.712249	9.107914	8.559479
16	11.652296	11.234015	10.837770	10.105895	9.446649	8.851369
17	12.165669	11.707191	11.274066	10.477260	9.763223	9.121638
18	12.659297	12.159992	11.689587	10.827603	10.059087	9.371887
19	13.133939	12.593294	12.085321	11.158116	10.335595	9.603599
20	13.590326	13.007936	12.462210	11.469921	10.594014	9.818147
21	14.029160	13.404724	12.821153	11.764077	10.835527	10.016803
22	14.451115	13.784425	13.163003	12.041582	11.061241	10.200744
23	14.856842	14.147775	13.488574	12.303379	11.272187	10.371059
24	15.246963	14.495478	13.798642	12.550358	11.469334	10.528758
25	15.622080	14.828209	14.093945	12.783356	11.653583	10.674776
26	15.982769	15.146611	14.375185	13.003166	11.825779	10.809978
27	16.329586	15.451303	14.643034	13.210534	11.986709	10.935165
28	16.663063	15.742874	14.898127	13.406164	12.137111	11.051078
29	16.983715	16.021889	15.141074	13.590721	12.277674	11.158406
30	17.292033	16.288889	15.372451	13.764831	12.409041	11.257783
31	17.588494	16.544391	15.592811	13.929086	12.531814	11.349799
32	17.873552	16.788891	15.802677	14.084043	12.646555	11.434999
33	18.147646	17.022862	16.002549	14.230230	12.753790	11.513888
34	18.411198	17.246758	16.192904	14.368141	12.854009	11.586934
35	18.664613	17.461012	16.374194	14.498246	12.947672	11.654568
36	18.908282	17.666041	16.546852	14.620987	13.035208	11.717193
37	19.142579	17.862240	16.711287	14.736780	13.117017	11.775179
38	19.367864	18.049990	16.867893	14.846019	13.193473	11.828869
39	19.584485	18.229656	17.017041	14.949075	13.264928	11.878582
40	19.792774	18.401584	17.159086	15.046297	13.331709	11.924613
41	19.993052	18.566109	17.294368	15.138016	13.394120	11.967235
42	20.185627	18.723550	17.423208	15.224543	13.452449	12.006699
43	20.370795	18.874210	17.545912	15.306173	13.506962	12.043240
44	20.548841	19.018383	17.662773	15.383182	13.557908	12.077074
45	20.720040	19.156347	17.774070	15.455832	13.605522	12.108402
46	20.884654	19.288371	17.880067	15.524370	13.650020	12.137409
47	21.042936	19.414709	17.981016	15.589028	13.691608	12.164267
48	21.195131	19.535607	18.077158	15.650027	13.730474	12.189136
49	21.341472	19.651298	18.168722	15.707572	13.766799	12.212163
50	21.482185	19.762008	18.255925	15.761861	13.800746	12.233485

TABLE IV.

ANNUITIES CERTAIN—PRESENT VALUES,

Showing the *Present Value* of £1 *per Annum* for any number of years not exceeding 100.

Years.	1 ℔ Cent.	1½ ℔ Cent.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent.
51	39.798132	35.467674	31.787849	28.646158	25.951227	23.628616
52	40.394190	35.928743	32.144950	28.923081	26.166240	23.795765
53	40.984346	36.382998	32.495049	29.193250	26.374990	23.957260
54	41.568659	36.830540	32.838283	29.456829	26.577660	24.113295
55	42.147187	37.271468	33.174788	29.713979	26.774428	24.264053
56	42.719987	37.705880	33.504694	29.964858	26.965464	24.409713
57	43.287116	38.133872	33.828131	30.209617	27.150936	24.550448
58	43.848630	38.555533	34.145227	30.448407	27.331005	24.686423
59	44.404584	38.970968	34.456104	30.681373	27.505831	24.817800
60	44.955034	39.380264	34.760887	30.908656	27.675564	24.944734
61	45.500034	39.783511	35.059693	31.130397	27.840353	25.067376
62	46.039638	40.180799	35.352640	31.346728	28.000343	25.185870
63	46.573899	40.572216	35.639843	31.557784	28.155673	25.300358
64	47.102870	40.957848	35.921415	31.763691	28.306478	25.410974
65	47.626604	41.337781	36.197466	31.964577	28.452891	25.517849
66	48.145152	41.712099	36.468104	32.160563	28.595040	25.621110
67	48.658566	42.080886	36.733435	32.351769	28.733049	25.720880
68	49.166897	42.444223	36.993564	32.538311	28.867038	25.817275
69	49.670195	42.802190	37.248592	32.720303	28.997124	25.910411
70	50.168510	43.154867	37.498619	32.897857	29.123421	26.000397
71	50.661891	43.502332	37.743744	33.071080	29.246040	26.087340
72	51.150387	43.844662	37.984063	33.240078	29.365087	26.171343
73	51.634046	44.181933	38.219670	33.404954	29.480667	26.252505
74	52.112917	44.514220	38.450657	33.565809	29.592881	26.330923
75	52.587047	44.841596	38.677114	33.722740	29.701826	26.406689
76	53.056482	45.164134	38.899132	33.875844	29.807598	26.479892
77	53.521269	45.481905	39.116796	34.025214	29.910290	26.550621
78	53.981454	45.794980	39.330192	34.170940	30.009990	26.618957
79	54.437083	46.103429	39.539404	34.313113	30.106786	26.684983
80	54.888201	46.407319	39.744514	34.451817	30.200763	26.748776
81	55.334852	46.706718	39.945602	34.587139	30.292003	26.810411
82	55.777081	47.001693	40.142747	34.719160	30.380586	26.869963
83	56.214932	47.292309	40.336026	34.847961	30.466588	26.927500
84	56.648448	47.578630	40.525516	34.973620	30.550086	26.983092
85	57.077671	47.860719	40.711290	35.096215	30.631151	27.036804
86	57.502644	48.138639	40.893422	35.215819	30.709855	27.088699
87	57.923410	48.412452	41.071982	35.332507	30.786267	27.138840
88	58.340010	48.682219	41.247041	35.446348	30.860454	27.187285
89	58.752485	48.947999	41.418668	35.557413	30.932479	27.234092
90	59.160876	49.209851	41.586929	35.665768	31.002407	27.279316
91	59.565224	49.467834	41.751891	35.771481	31.070298	27.323010
92	59.965568	49.722004	41.913619	35.874616	31.136212	27.365227
93	60.361948	49.972418	42.072175	35.975235	31.200206	27.406017
94	60.754404	50.219131	42.227623	36.073400	31.262336	27.445427
95	61.142974	50.462198	42.380023	36.169171	31.322656	27.483504
96	61.527697	50.701673	42.529434	36.262606	31.381219	27.520294
97	61.908611	50.937609	42.675916	36.353762	31.438077	27.555839
98	62.285753	51.170058	42.819525	36.442694	31.493279	27.590183
99	62.659161	51.399072	42.960319	36.529458	31.546872	27.623365
100	63.028872	51.624701	43.098352	36.614105	31.598905	27.655425
Perp.	100.000000	66.666667	50.000000	40.000000	33.333333	28.571429

TABLE IV.

ANNUITIES CERTAIN—PRESENT VALUES.

Shewing the *Present Value* of £1 *per Annum* for any number of years not exceeding 100.

Years.	4 ℔ Cent.	4½ ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.	7 ℔ Cent.	8 ℔ Cent.
51	21.617485	19.867950	18.338977	15.813076	13.832473	12.253227
52	21.747582	19.969330	18.418073	15.861393	13.862124	12.271506
53	21.872675	20.066345	18.493403	15.906974	13.889836	12.288432
54	21.992957	20.159181	18.565146	15.949976	13.915735	12.304103
55	22.108612	20.248021	18.633472	15.990543	13.939939	12.318614
56	22.219819	20.333034	18.698545	16.028814	13.962560	12.332050
57	22.326749	20.414387	18.760519	16.064919	13.983701	12.344491
58	22.429567	20.492236	18.819542	16.098980	14.003459	12.356010
59	22.528430	20.566733	18.875754	16.131113	14.021924	12.366676
60	22.623490	20.638022	18.929290	16.161428	14.039181	12.376552
61	22.714894	20.706241	18.980276	16.190026	14.055309	12.385696
62	22.802783	20.771523	19.028834	16.217006	14.070383	12.394163
63	22.887291	20.833993	19.075080	16.242458	14.084470	12.402003
64	22.968549	20.893773	19.119124	16.266470	14.097635	12.409262
65	23.046682	20.950979	19.161070	16.289123	14.109940	12.415983
66	23.121810	21.005722	19.201019	16.310493	14.121439	12.422207
67	23.194048	21.058107	19.239066	16.330654	14.132186	12.427969
68	23.263507	21.108236	19.275301	16.349673	14.142230	12.433305
69	23.330296	21.156207	19.309810	16.367617	14.151617	12.438245
70	23.394515	21.202112	19.342677	16.384544	14.160389	12.442820
71	23.456264	21.246040	19.373978	16.400513	14.168588	12.447055
72	23.515639	21.288077	19.403788	16.415578	14.176251	12.450977
73	23.572730	21.328303	19.432179	16.429791	14.183412	12.454608
74	23.627625	21.366797	19.459218	16.443199	14.190104	12.457971
75	23.680408	21.403634	19.484970	16.455848	14.196359	12.461084
76	23.731162	21.438884	19.509495	16.467781	14.202205	12.463967
77	23.779963	21.472616	19.532853	16.479039	14.207668	12.466636
78	23.826888	21.504896	19.555098	16.489659	14.212774	12.469107
79	23.872008	21.535785	19.576284	16.499679	14.217546	12.471396
80	23.915392	21.565345	19.596460	16.509131	14.222005	12.473514
81	23.957108	21.593632	19.615677	16.518048	14.226173	12.475476
82	23.997219	21.620700	19.633978	16.526460	14.230069	12.477293
83	24.035787	21.646603	19.651407	16.534396	14.233709	12.478975
84	24.072872	21.671390	19.668007	16.541883	14.237111	12.480532
85	24.108531	21.695110	19.683816	16.548947	14.240291	12.481974
86	24.142818	21.717809	19.698873	16.555610	14.243262	12.483310
87	24.175787	21.739530	19.713212	16.561896	14.246040	12.484546
88	24.207487	21.760316	19.726869	16.567827	14.248635	12.485691
89	24.237969	21.780207	19.739875	16.573421	14.251061	12.486751
90	24.267278	21.799241	19.752262	16.578699	14.253328	12.487732
91	24.295459	21.817455	19.764059	16.583679	14.255447	12.488641
92	24.322557	21.834885	19.775294	16.588376	14.257427	12.489482
93	24.348612	21.851565	19.785994	16.592808	14.259277	12.490261
94	24.373666	21.867526	19.796185	16.596988	14.261007	12.490983
95	24.397756	21.882800	19.805891	16.600932	14.262623	12.491651
96	24.420919	21.897417	19.815134	16.604653	14.264134	12.492269
97	24.443191	21.911403	19.823937	16.608163	14.265546	12.492842
98	24.464607	21.924788	19.832321	16.611475	14.266865	12.493372
99	24.485199	21.937596	19.840306	16.614599	14.268098	12.493863
100	24.504999	21.949853	19.847910	16.617546	14.269251	12.494318
Perp.	25.000000	22.222222	20.000000	16.666667	14.285714	12.500000

TABLE V.

NEW RATE OF MORTALITY.

Exhibiting the LAW of MORTALITY AMONGST ASSURED LIVES according to the combined Town and Country Experience of Life Offices, deduced from 62,537 Assurances under the superintendence of a Committee of eminent Actuaries.*

Completed Age.	Number Surviving at each Age.	Deaths in each Year.	Logarithm of Number surviving at each Age.	Completed Age.	Number Surviving at each Age.	Deaths in each Year.	Logarithm of Number surviving at each Age.
10	100000	676	5.0000000	55	63469	1375	4.8025617
11	99324	674	4.9970542	56	62094	1436	4.7930496
12	98650	672	4.9940971	57	60658	1497	4.7828881
13	97978	671	4.9911286	58	59161	1561	4.7720355
14	97307	671	4.9881441	59	57600	1627	4.7604225
15	96636	671	4.9851389	60	55973	1698	4.7479786
16	95965	672	4.9821129	61	54275	1770	4.7345998
17	95293	673	4.9790610	62	52505	1844	4.7202007
18	94620	675	4.9759829	63	50661	1917	4.7046738
19	93945	677	4.9728737	64	48744	1990	4.6879212
20	93268	680	4.9697327	65	46754	2061	4.6698188
21	92588	683	4.9665547	66	44693	2128	4.6502395
22	91905	686	4.9633391	67	42565	2191	4.6290526
23	91219	690	4.9600853	68	40374	2246	4.6061018
24	90529	694	4.9567877	69	38128	2291	4.5812440
25	89835	698	4.9534456	70	35837	2327	4.5543316
26	89137	703	4.9500580	71	33510	2351	4.5251744
27	88434	708	4.9466193	72	31159	2362	4.4935835
28	87726	714	4.9431283	73	28797	2358	4.4593472
29	87012	720	4.9395792	74	26439	2339	4.4222450
30	86292	727	4.9359705	75	24100	2303	4.3820170
31	85565	734	4.9322962	76	21797	2249	4.3383967
32	84831	742	4.9285546	77	19548	2179	4.2911023
33	84089	750	4.9247392	78	17369	2092	4.2397748
34	83339	758	4.9208483	79	15277	1987	4.1840381
35	82581	767	4.9168801	80	13290	1866	4.1235250
36	81814	776	4.9128276	81	11424	1730	4.0578182
37	81038	785	4.9086887	82	9694	1582	3.9865030
38	80253	795	4.9044613	83	8112	1427	3.9091279
39	79458	805	4.9001376	84	6685	1268	3.8251014
40	78653	815	4.8957153	85	5417	1111	3.7337588
41	77838	826	4.8911917	86	4306	958	3.6340740
42	77012	839	4.8865584	87	3348	811	3.5247854
43	76173	857	4.8818011	88	2537	673	3.4043205
44	75316	881	4.8768872	89	1864	545	3.2704459
45	74435	909	4.8717772	90	1319	427	3.1202448
46	73526	944	4.8664409	91	892	322	2.9503649
47	72582	981	4.8608289	92	570	231	2.7558749
48	71601	1021	4.8549191	93	339	155	2.5301997
49	70580	1063	4.8486817	94	184	95	2.2648178
50	69517	1108	4.8420910	95	89	52	1.9493900
51	68409	1156	4.8351132	96	37	24	1.5682017
52	67253	1207	4.8277117	97	13	9	1.1139434
53	66046	1261	4.8198465	98	4	3	0.6020600
54	64785	1316	4.8114745	99	1	1	0.0000000

* Messrs. Charles Ansell of the "Atlas;" Griffith Davies of the "Guardian;" J. J. Downes of the "Economic;" Benjamin Gompertz of the "Alliance;" George Kirkpatrick of the "LawLife;" Joshua Milne of the "Sun;" J. M. Rainbow of the "Crown;" W. S. B. Wolhouse of the "National Loan Fund," and Samuel Ingall, of the "Imperial," Secretary to the Committee.

TABLE VI.

PROBABILITIES OF LIFE.

Shewing the Probability of Dying in one Year, the Probability of Surviving One Year, and the Logarithm of the Probability of Surviving One Year. (Deduced from Table V.)

Completed Age.	Probability of Dying in one year.	Probability of Surviving one year.	Logarithm of Probability of Surviving one year.	Completed Age.	Probability of Dying in one year.	Probability of Surviving one year.	Logarithm of Probability of Surviving one year.
10	.0067600	.9932400	9.9970542	55	.0216643	.9783357	9.9904879
11	.0067859	.9932141	9.9970429	56	.0231261	.9768739	9.9898385
12	.0068119	.9931881	9.9970315	57	.0246793	.9753207	9.9891474
13	.0068484	.9931516	9.9970155	58	.0263856	.9736144	9.9883870
14	.0068959	.9931041	9.9969948	59	.0282464	.9717536	9.9875561
15	.0069434	.9930566	9.9969740	60	.0303362	.9696638	9.9866212
16	.0070026	.9929974	9.9969481	61	.0326116	.9673884	9.9856009
17	.0070625	.9929375	9.9969219	62	.0351204	.9648796	9.9844731
18	.0071336	.9928664	9.9968908	63	.0378398	.9621602	9.9832474
19	.0072064	.9927936	9.9968590	64	.0408256	.9591744	9.9818976
20	.0072909	.9927091	9.9968220	65	.0440818	.9559182	9.9804207
21	.0073768	.9926232	9.9967844	66	.0476138	.9523862	9.9788131
22	.0074641	.9925359	9.9967462	67	.0514741	.9485259	9.9770492
23	.0075643	.9924357	9.9967024	68	.0556300	.9443700	9.9751422
24	.0076659	.9923341	9.9966579	69	.0600872	.9399128	9.9730876
25	.0077700	.9922300	9.9966124	70	.0649328	.9350672	9.9708428
26	.0078866	.9921134	9.9965613	71	.0701581	.9298419	9.9684091
27	.0080061	.9919939	9.9965090	72	.0758049	.9241951	9.9657637
28	.0081389	.9918611	9.9964509	73	.0818834	.9181166	9.9628978
29	.0082750	.9917250	9.9963913	74	.0884679	.9115321	9.9597720
30	.0084248	.9915752	9.9963257	75	.0955602	.9044398	9.9563797
31	.0085784	.9914216	9.9962584	76	.1031794	.8968206	9.9527056
32	.0087468	.9912532	9.9961846	77	.1114692	.8885308	9.9486725
33	.0089191	.9910809	9.9961091	78	.1204444	.8795556	9.9442633
34	.0090955	.9909045	9.9960318	79	.1300648	.8699352	9.9394869
35	.0092877	.9907123	9.9959475	80	.1404064	.8595936	9.9342932
36	.0094849	.9905151	9.9958611	81	.1514357	.8485643	9.9286848
37	.0096867	.9903133	9.9957726	82	.1631938	.8368062	9.9226249
38	.0099064	.9900936	9.9956763	83	.1759121	.8240879	9.9159735
39	.0101311	.9898689	9.9955777	84	.1896785	.8103215	9.9086574
40	.0103619	.9896381	9.9954764	85	.2050951	.7949049	9.9003152
41	.0106118	.9893882	9.9953667	86	.2224804	.7775196	9.8907114
42	.0108943	.9891057	9.9952427	87	.2422340	.7577660	9.8795351
43	.0112509	.9887491	9.9950861	88	.2652741	.7347259	9.8661254
44	.0116973	.9883027	9.9948900	89	.2923820	.7076180	9.8497989
45	.0122120	.9877880	9.9946637	90	.3237300	.6762700	9.8301201
46	.0128389	.9671611	9.9943880	91	.3609866	.6390134	9.8055100
47	.0135157	.9864843	9.9940902	92	.4052632	.5947368	9.7743248
48	.0142595	.9857405	9.9937626	93	.4572271	.5427729	9.7346181
49	.0150611	.9849389	9.9934093	94	.5163043	.4836957	9.6845722
50	.0159386	.9840614	9.9930222	95	.5842697	.4157303	9.6188117
51	.0168982	.9831018	9.9925985	96	.6486486	.3513514	9.5457417
52	.0179473	.9820527	9.9921348	97	.6923077	.3076923	9.4881166
53	.0190927	.9809073	9.9916280	98	.7500000	.2500000	9.3979400
54	.0203133	.9796867	9.9910872	99	1.000000	.0000000	

TABLE VII.

EXPECTATION OF LIFE.

Shewing the Expectation of Life at every Age according to the Law of Mortality amongst Assured Lives. (Deduced from Table V.)

Completed Age.	Expectation of Life.	Completed Age.	Expectation of Life.
10	48.36	55	16.86
11	47.68	56	16.22
12	47.01	57	15.59
13	46.33	58	14.97
14	45.64	59	14.37
15	44.96	60	13.77
16	44.27	61	13.18
17	43.58	62	12.61
18	42.88	63	12.05
19	42.19	64	11.51
20	41.49	65	10.97
21	40.79	66	10.46
22	40.09	67	9.96
23	39.39	68	9.47
24	38.68	69	9.00
25	37.98	70	8.54
26	37.27	71	8.10
27	36.56	72	7.67
28	35.86	73	7.26
29	35.15	74	6.86
30	34.43	75	6.48
31	33.72	76	6.11
32	33.01	77	5.76
33	32.30	78	5.42
34	31.58	79	5.09
35	30.87	80	4.78
36	30.15	81	4.48
37	29.44	82	4.18
38	28.72	83	3.90
39	28.00	84	3.63
40	27.28	85	3.36
41	26.56	86	3.10
42	25.84	87	2.84
43	25.12	88	2.59
44	24.40	89	2.35
45	23.69	90	2.11
46	22.97	91	1.89
47	22.27	92	1.67
48	21.56	93	1.47
49	20.87	94	1.28
50	20.18	95	1.12
51	19.50	96	.99
52	18.82	97	.89
53	18.16	98	.75
54	17.50	99	.50

TABLE VIII.

COMPARATIVE EXPECTATIONS OF LIFE.

Shewing the Expectation or Average duration of Life deduced from Eight Original Tables prepared under the Superintendence of a Committee of eminent Actuaries, and compared with the Carlisle, Equitable, and Northampton Tables.

Completed Age.	Male Lives—Town, Country and Irish Experience.	Female Lives—Town, Country and Irish Experience.	Town Experience.	Country Experience.	Irish Experience.	Combined Town Experience.	General Experience.	Adjusted Experience. (Table 7.)	*Carlisle* Experience.	*Equitable* Experience.	*Northampton* Experience	Completed Age.
20	39.84	35.86	41.22	40.33	34.95	41.55	40.97	41.49	41.46	41.06	33.43	20
21	39.29	36.01	40.68	40.29	34.48	40.96	40.45	40.79	40.75	40.33	32.90	21
22	38.70	36.20	40.47	39.89	33.48	40.38	39.92	40.09	40.04	39.60	32.39	22
23	37.98	35.41	39.87	38.98	32.78	39.65	39.18	39.39	39.31	38.88	31.88	23
24	37.41	34.81	39.23	38.37	32.64	38.98	38.54	38.68	38.59	38.16	31.36	24
25	36.63	34.41	38.56	37.55	31.94	38.26	37.84	37.98	37.86	37.44	30.85	25
26	35.88	33.79	37.82	36.88	31.05	37.54	37.13	37.27	37.14	36.73	30.33	26
27	35.23	33.14	37.10	36.12	30.99	36.81	36.42	36.56	36.41	36.02	29.82	27
28	34.63	33.07	36.45	35.54	30.76	36.12	35.76	35.86	35.69	35.33	29.30	28
29	33.96	32.61	35.67	34.91	30.56	35.38	35.06	35.15	35.00	34.65	28.79	29
30	33.17	31.73	34.84	34.20	29.71	34.54	34.25	34.43	34.34	33.98	28.27	30
31	32.44	31.04	34.07	33.51	29.08	33.78	33.50	33.72	33.68	33.30	27.76	31
32	31.73	30.51	33.34	32.86	28.36	33.01	32.75	33.01	33.03	32.64	27.24	32
33	30.92	29.86	32.53	32.05	27.63	32.22	31.98	32.30	32.36	31.93	26.72	33
34	30.21	29.60	31.87	31.41	26.85	31.51	31.27	31.58	31.68	31.32	26.20	34
35	29.52	29.07	31.12	30.78	26.30	30.77	30.55	30.87	31.00	30.66	25.68	35
36	28.87	28.88	30.44	30.20	25.77	30.08	29.90	30.15	30.32	30.01	25.16	36
37	28.15	28.30	29 69	29.45	25.26	29.37	29.20	29.44	29.64	29.35	24.64	37
38	27.49	27.62	29.00	28.81	24.61	28.65	28.51	28.72	28.96	28.70	24.12	38
39	26.81	27.00	28.34	28.16	23.93	27.92	27.79	28.00	28.28	28.05	23.60	39
40	26.06	26.36	27.53	27.38	23.36	27.20	27.07	27.28	27.61	27.40	23.08	40
41	25.42	25.84	26.85	26.73	22.86	26.51	26.41	26.56	26.97	26.74	22.56	41
42	24.70	25.34	26.19	26.01	22.14	25.79	25.68	25.84	26.34	26.07	22.04	42
43	24.00	24.57	25.47	25.22	21.56	25.07	24.98	25.12	25.71	25.40	21.54	43
44	23.34	23.94	24.77	24.59	21.00	24.32	24.26	24.40	25.09	24.75	21.03	44
45	22.63	23.21	24.08	23.83	20.30	23.61	23.55	23.69	24.46	24.10	20.52	45
46	21.98	22.60	23.42	23.13	19.76	22.90	22.85	22.97	23.82	23.44	20.02	46
47	21.24	21.97	22.70	22.34	19.12	22.15	22.12	22.27	23.17	22.78	19.51	47
48	20.62	21.16	22.01	21.67	18.59	21.44	21.41	21.56	22.50	22.12	19.00	48
49	20.08	20.69	21.34	21.13	18.27	20.77	20.79	20.87	21.81	21.47	18.49	49
50	19.41	20.05	20.58	20.48	17.76	20.07	20.11	20.18	21.11	20.83	17.99	50
51	18.73	19.46	19.89	19.73	17.20	19.41	19.46	19.50	20.39	20.20	17.50	51
52	18.05	18.80	19.17	19 03	16.62	18.75	18.79	18.82	19.68	19.59	17.02	52
53	17.40	18.31	18.52	18.30	16.11	18.11	18.16	18.16	18.97	19.00	16.54	53
54	16.77	17.58	17.95	17.55	15.51	17.46	17.50	17.50	18.28	18.43	16.06	54
55	16.21	16.78	17.25	16.96	15.04	16.76	16.83	16.86	17.58	17.85	15.58	55
56	15.66	16.07	16.74	16.40	14.41	16.17	16.23	16.22	16.89	17.28	15.10	56
57	15.09	15.39	16.08	15.87	13.85	15.56	15.62	15.59	16.21	16.71	14.63	57
58	14.45	14.79	15.35	15.24	13.34	14.90	14.98	14.97	15.55	16.15	14.15	58
59	13.99	14.28	14.86	14.60	13.04	14.25	14.38	14.37	14.92	15.60	13.68	59
60	13.47	13.78	14.23	14.03	12.67	13.68	13.81	13.77	14.34	15.06	13.21	60
61	12.99	13.10	13.58	13.50	12.29	13.08	13.24	13.18	13.82	14.51	12.75	61
62	12.46	12.41	13.01	12.87	11.81	12 52	12.68	12.61	13.31	13.96	12.28	62
63	11.90	11.87	12.26	12.26	11.45	11.91	12.09	12.05	12.81	13.42	11.81	63
64	11.27	11.09	11.62	11.75	10.67	11.32	11.50	11.51	12.30	12.88	11.35	64
65	10.87	10.60	11.18	11.44	10.19	10.86	11.03	10.97	11.79	12.35	10.88	65
66	10.38	10.00	10.69	10.82	9.74	10.37	10.51	10.46	11.27	11.83	10.42	66
67	9.93	9.56	10.11	10.26	9.44	9.87	10.03	9.96	10.75	11.32	9.96	67
68	9.33	8.85	9.57	9.72	8.73	9.31	9.46	9.47	10.23	10.82	9.50	68
69	8.81	8.38	9.29	8.94	8.27	8.88	8.99	9.00	9.70	10.32	9.05	69
70	8.34	7.93	8.61	8.48	7.92	8 44	8.50	8.54	9.18	9.84	8.60	70
71	7.88	7.31	8.33	7.92	7.37	8.10	8.13	8.10	8.65	9.36	8.17	71
72	7.43	6.63	7.65	7.37	6.98	7.69	7.72	7.67	8.16	8.88	7.74	72
73	6.97	6.19	7.08	6.76	6.70	7.22	7.26	7.26	7.72	8.42	7.33	73
74	6.57	5.72	6.53	6.31	6.37	6.79	6.84	6.86	7.33	7.97	6.92	74
75	6.03	5.37	6.29	5.55	5.97	6.45	6.46	6.48	7·01	7.52	6.54	75
76	5.63	5.45	6.34	5.45	5.34	6.10	6.08	6.11	6·69	7.08	6.18	76
77	5.48	4.78	5.52	4.90	5.59	5.74	5.77	5.76	6·40	6.64	5.83	77
78	5.16	4.56	5.19	4.69	5.23	5.32	5.37	5.42	6·12	6.20	5.48	78
79	4.99	4.80	5.32	4.91	4.80	5.05	5.07	5.09	5.80	5.78	5.11	79
80	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.78	5.51	5.38	4.75	80

TABLE IX.

LIFE ANNUITIES AND ASSURANCES—SINGLE LIVES.

Preparatory Table for determining the values of Annuities and Assurances for the whole term of Life, or for temporary and deferred periods, according to the combined experience of various Life Offices.

(2½ PER CENT.)

Age	D	N	S	M	R
10	78119.840	2017796.413	43023298.36	26999.930	995447.53
11	75699.268	1942097.145	41005501.95	26484.720	968447.60
12	73351.788	1868745.357	39063404.80	25983.563	941962.88
13	71075.238	1797670.119	37194659.45	25496.081	915979.32
14	68866.811	1728803.308	35396989.33	25021.196	890483.24
15	66723.830	1662079.478	33668186.02	24557.894	865462.04
16	64644.416	1597435.062	32006106.54	24105.891	840904.15
17	62626.089	1534808.973	30408671.48	23664.256	816798.26
18	60667.118	1474141.855	28873862.51	23232.751	793134.00
19	58765.202	1415376.653	27399720.65	22810.520	769901.25
20	56918.750	1358457.903	25984344.00	22397.367	747090.73
21	55125.625	1303332.278	24625886.10	21992.504	724693.36
22	53384.367	1249947.911	23322553.82	21595.774	702700.86
23	51693.555	1198254.356	22072605.91	21207.019	681105.08
24	50051.252	1148203.104	20874351.55	20825.535	659898.07
25	48456.153	1099746.951	19726148.45	20451.198	639072.53
26	46906.984	1052839.967	18626401.50	20083.886	618621.33
27	45401.991	1007437.976	17573561.53	19722.966	598537.45
28	43940.002	963497.974	16566123.55	19368.345	578814.48
29	42519.392	920978.582	15602625.58	19019.441	559446.13
30	41139.080	879839.502	14681647.00	18676.186	540426.69
31	39797.549	840041.953	13801807.50	18338.048	521750.50
32	38493.809	801548.144	12961765.54	18004.980	503412.46
33	37226.450	764321.694	12160217.40	17676.494	485407.48
34	35994.559	728327.135	11395895.70	17352.565	467730.99
35	34797.245	693529.890	10667568.57	17033.166	450378.42
36	33633.221	659896.669	9974038.68	16717.857	433345.25
37	32501.671	627394.998	9314142.011	16406.629	416627.40
38	31401.789	595993.209	8686747.013	16099.470	400220.77
39	30332.407	565660.802	8090753.804	15795.986	384121.30
40	29292.785	536368.017	7525093.002	15496.179	368325.31
41	28282.199	508085.818	6988724.985	15200.052	352829.13
42	27299.586	480786.232	6480639.167	14907.247	337629.08
43	26343.583	454442.649	5999852.935	14617.088	322721.83
44	25411.901	429030.748	5545410.286	14327.933	308104.75
45	24502.096	404528.652	5116379.538	14037.931	293776.81
46	23612.563	380916.089	4711850.886	13746.009	279738.88
47	22740.880	358175.209	4330934.797	13450.242	265992.87
48	21886.361	336288.848	3972759.588	13150.378	252542.63
49	21048.068	315240.780	3636470.740	12845.900	239392.25
50	20225.429	295015.351	3321229.960	12536.629	226546.35
51	19417.625	275597.726	3026214.609	12222.127	214009.72
52	18623.901	256973.825	2750616.883	11902.004	201787.60
53	17843.565	239130.260	2493643.058	11575.911	189885.59
54	17075.983	222054.277	2254512.798	11243.537	178309.68

TABLE IX.

LIFE ANNUITIES AND ASSURANCES—SINGLE LIVES.

Preparatory Table for determining the values of Annuities and Assurances for the whole term of Life, or for temporary and deferred periods, according to the combined experience of various Life Offices.

($2\frac{1}{2}$ PER CENT.)

Age.	D	N	S	M	R
55	16321.086	205733.191	2032458.521	10905.127	167066.15
56	15578.052	190155.139	1826725.330	10560.169	156161.02
57	14846.625	175308.514	1636570.191	10208.694	145600.85
58	14127.044	161181.470	1461261.677	9851.2260	135392.16
59	13418.823	147762.647	1300080.207	9487.5666	125540.93
60	12721.745	135040.902	1152317.560	9117.7762	116053.36
61	12034.944	123005.958	1017276.658	8741.2616	106935.59
62	11358.501	111647.457	894270.700	8358.3544	98194.325
63	10692.278	100955.179	782623.243	7969.1683	89835.971
64	10036.765	90918.414	681668.064	7574.4433	81866.803
65	9392.203	81526.211	590749.650	7174.6810	74292.359
66	8759.199	72767.012	509223.439	6770.7540	67117.678
67	8138.674	64628.338	436456.427	6363.8681	60346.924
68	7531.456	57096.882	371828.089	5955.1541	53983.056
69	6939.006	50157.876	314731.207	5546.3992	48027.902
70	6362.987	43794.889	264573.331	5139.6239	42481.503
71	5804.703	37990.186	220778.442	4736.5340	37341.879
72	5265.810	32724.376	182788.256	4339.2196	32605.345
73	4747.937	27976.439	150063.880	3949.7823	28266.125
74	4252.839	23723.600	122087.441	3570.4868	24316.343
75	3782.049	19941.551	98363.841	3203.4240	20745.856
76	3337.205	16604.346	78422.290	2850.8258	17542.432
77	2919.878	13684.468	61817.944	2514.8935	14691.607
78	2531.123	11153.345	48133.476	2197.3555	12176.713
79	2171.964	8981.381	36980.131	1899.9313	9979.358
80	1843.384	7137.997	27998.750	1624.3254	8079.426
81	1545.913	5592.084	20860.753	1371.8155	6455.101
82	1279.812	4312.272	15268.669	1143.4192	5083.285
83	1044.833	3267.4392	10956.3972	939.6561	3939.866
84	840.0336	2427.4056	7688.9580	760.3400	3000.210
85	664.0951	1763.3105	5261.5524	604.8901	2239.870
86	515.0171	1248.2934	3498.2419	472.0095	1634.980
87	390.6691	857.6243	2249.9485	360.2230	1162.970
88	288.8154	568.8089	1392.3242	267.8977	802.7475
89	207.0245	361.7844	823.5153	193.1512	534.8498
90	142.9213	218.86312	461.73086	134.0973	341.6986
91	94.29596	124.56716	242.86774	88.95783	207.6014
92	58.78672	65.78044	118.30058	55.74849	118.6435
93	34.10988	31.67056	52.52014	32.50548	62.8951
94	18.06236	13.60820	20.84958	17.28990	30.3896
95	8.52359	5.08461	7.24138	8.19168	13.0997
96	3.45709	1.62752	2.15677	3.33307	4.90799
97	1.18503	0.44249	0.52925	1.145331	1.57492
98	0.35573	0.08676	0.08676	0.344938	0.42958
99	0.08676	0.00000	0.00000	0.084647	0.08465

TABLE X.

LIFE ANNUITIES AND ASSURANCES—SINGLE LIVES.

Preparatory Table for determining the values of Annuities and Assurances, for the whole term of Life, or for temporary and deferred periods, according to the combined experience of various Life Offices.

(3 PER CENT.)

Age.	D	N	S	M	R
10	74409.391	1737895.587	34875249.57	21623.808	743735.36
11	71753.769	1666141.818	33137353.98	21135.452	722111.55
12	69191.125	1596950.693	31471212.16	20662.722	700976.10
13	66718.250	1530232.443	29874261.47	20205.122	680313.37
14	64331.391	1465901.052	28344029.03	19761.512	660108.25
15	62026.971	1403874.081	26878127.98	19330.823	640346.74
16	59802.215	1344071.866	25474253.90	18912.678	621015.92
17	57653.833	1286418.033	24130182.03	18506.107	602103.24
18	55579.278	1230838.755	22843764.00	18110.790	583597.13
19	53575.521	1177263.234	21612925.25	17725.847	565486.34
20	51640.230	1125623.004	20435662.02	17351.009	547760.50
21	49770.613	1075852.391	19310039.02	16985.475	530409.49
22	47964.530	1027887.861	18234186.63	16629.022	513424.01
23	46219.915	981667.946	17206298.77	16281.432	496794.99
24	44534.270	937133.676	16224630.82	15941.998	480513.56
25	42905.695	894227.981	15287497.14	15610.539	464571.56
26	41332.357	852895.624	14393269.16	15286.880	448961.02
27	39812.019	813083.605	13540373.54	14970.398	433674.14
28	38342.995	774740.610	12727289.93	14660.947	418703.74
29	36923.226	737817.384	11952549.32	14357.964	404042.80
30	35551.161	702266.223	11214731.94	14061.333	389684.83
31	34224.900	668041.323	10512465.72	13770.543	375623.50
32	32943.018	635098.305	9844424.394	13485.503	361852.96
33	31703.760	603394.545	9209326.089	13205.750	348367.45
34	30505.816	572888.729	8605931.544	12931.216	335161.70
35	29347.917	543540.812	8033042.815	12661.835	322230.49
36	28228.483	515312.329	7489502.003	12397.196	309568.65
37	27146.347	488165.982	6974189.674	12137.249	297171.46
38	26100.374	462065.608	6486023.692	11881.946	285034.21
39	25089.146	436976.462	6023958.084	11630.922	273152.26
40	24111.615	412864.847	5586981.622	11384.144	261521.34
41	23166.768	389698.079	5174116.775	11141.577	250137.19
42	22253.327	367444.752	4784418.696	10902.897	238995.62
43	21369.797	346074.955	4416973.944	10667.521	228092.72
44	20513.953	325561.002	4070898.989	10434.099	217425.20
45	19683.489	305877.513	3745337.987	10201.128	206991.10
46	18876.809	287000.704	3439460.474	9967.7548	196789.97
47	18091.700	268909.004	3152459.770	9732.4545	186822.22
48	17327.356	251581.648	2883550.766	9495.0537	177089.76
49	16582.791	234998.857	2631969.118	9255.1695	167594.71
50	15857.320	219141.537	2396970.261	9012.6917	158339.54
51	15150.075	203991.462	2177828.724	8767.3105	149326.85
52	14460.256	189531.206	1973837.262	8518.7557	140559.54
53	13787.122	175744.084	1784306.056	8266.7941	132040.78
54	13129.988	162614.096	1608561.972	8011.2270	123773.99

TABLE X.

LIFE ANNUITIES AND ASSURANCES—SINGLE LIVES.

Preparatory Table for determining the values of Annuities and Assurances, for the whole term of Life, or for temporary and deferred periods, according to the combined experience of various Life Offices.

(3 PER CENT.)

Years.	D	N	S	M	R
55	12488.615	150125.481	1445947.876	7752.2815	115762.76
56	11862.195	138263.286	1295822.395	7489.6069	108010.48
57	11250.356	127012.930	1157559.109	7223.2693	100520.87
58	10653.112	116359.8179	1030546.179	6953.7048	93297.603
59	10069.9246	106289.8933	914186.361	6680.8029	86343.898
60	9500.4702	96789.4231	807896.468	6404.6472	79663.095
61	8943.9451	87845.4780	711107.045	6124.8348	73258.448
62	8400.2602	79445.2178	623261.567	5841.6530	67133.613
63	7869.1640	71576.0538	543816.349	5555.2249	61291.960
64	7350.8705	64225.1833	472240.295	5266.1305	55736.735
65	6845.4050	57379.7783	408015.112	4974.7681	50470.605
66	6353.0557	51026.7226	350635.334	4681.7995	45495.837
67	5874.3331	45152.3895	299608.611	4388.1174	40814.037
68	5409.6665	39742.7230	254456.222	4094.5478	36425.920
69	4959.9295	34782.7935	214713.499	3802.3741	32331.372
70	4526.1183	30256.6752	179930.706	3513.0269	28528.998
71	4108.9560	26147.7192	149674.031	3227.6930	25015.971
72	3709.3972	22438.3220	123526.312	2947.8127	21788.278
73	3328.3564	19109.9656	101087.990	2674.8128	18840.465
74	2966.8145	16143.1511	81978.024	2410.2132	16165.652
75	2625.5795	13517.5716	65834.873	2155.3903	13755.439
76	2305.5134	11212.0582	52317.301	1911.7973	11600.049
77	2007.4097	9204.6485	41105.2426	1680.8446	9688.2516
78	1731.6945	7472.9540	31900.5941	1463.5977	8007.4070
79	1478.7588	5994.1952	24427.6401	1261.0997	6543.8093
80	1248.9556	4745.23959	18433.4449	1074.3672	5282.7096
81	1042.3246	3702.91499	13688.2053	904.1136	4208.3424
82	858.71807	2844.19692	9985.2903	750.8660	3304.2288
83	697.65114	2146.54578	7141.0934	614.8103	2553.3628
84	558.18032	1588.36546	4994.5476	495.6595	1938.5525
85	439.13164	1149.23382	3406.1821	392.8685	1442.8930
86	338.90088	810.33294	2256.9483	305.42803	1050.0245
87	255.82730	554.50564	1446.6154	232.22536	744.5965
88	188.21086	366.29478	892.1098	172.06020	512.3711
89	134.25576	232.03902	525.8150	123.58696	340.3109
90	92.23475	139.80427	293.7760	85.47631	216.7239
91	60.55882	79.24545	153.9717	56.48683	131.2476
92	37.57077	41.67468	74.72624	35.26264	74.76080
93	21.69390	19.98078	33.05156	20.48007	39.49816
94	11.43190	8.54888	13.07078	10.84993	19.01809
95	5.36850	3.18038	4.52190	5.11950	8.16816
96	2.16684	1.01354	1.34152	2.07420	3.04866
97	0.73915	0.27439	0.32798	0.70962	0.97446
98	0.22080	0.05359	0.05359	0.21281	0.26484
99	0.05359	0.00000	0.00000	0.0520 3	0.05203

TABLE XI.

LIFE ANNUITIES AND ASSURANCES—SINGLE LIVES.

Preparatory Table for determining the values of Annuities and Assurances for the whole term of Life, or for temporary and deferred periods, according to the combined experience of various Life Offices.

($3\frac{1}{2}$ PER CENT.)

Age.	D	N	S	M	R
10	70891.881	1506695.178	27483798.21	17543.524	561018.40
11	68031.548	1438663.630	25977103.03	17080.501	543474.87
12	65284.922	1373378.708	24538439.40	16634.459	526394.37
13	62647.540	1310731.168	23165060.69	16204.779	509759.91
14	60114.491	1250616.677	21854329.52	15790.248	493555.13
15	57681.122	1192935.555	20603712.84	15389.734	477764.89
16	55343.582	1137591.973	19410777.28	15002.764	462375.15
17	53097.620	1084494.353	18273185.31	14628.324	447372.39
18	50939.731	1033554.622	17188690.96	14266.007	432744.06
19	48866.026	984688.596	16155136.34	13914.901	418478.06
20	46873.313	937815.283	15170447.74	13574.664	404563.16
21	44958.039	892857.244	14232632.46	13244.476	390988.49
22	43117.289	849739.955	13339775.21	12924.046	377744.02
23	41348.262	808391.693	13490035.26	12613.092	364819.97
24	39647.821	768743.872	12681643.57	12310.902	352206.88
25	38013.408	730730.464	11912899.69	12017.238	339895.98
26	36442.563	694287.901	11182169.23	11731.869	327878.74
27	34932.512	659355.389	10487881.33	11454.176	316146.87
28	33481.008	625874.381	9828525.940	11183.964	304692.69
29	32085.513	593788.868	9202651.559	10920.678	293508.73
30	30743.976	563044.892	8608862.691	10664.158	282588.05
31	29454.070	533590.822	8045817.799	10413.902	271923.89
32	28213.917	505376.905	7512226.977	10169.781	261509.99
33	27021.387	478355.518	7006850.072	9931.3450	251340.21
34	25874.763	452480.755	6528494.554	9698.4880	241408.86
35	24772.389	427708.366	6076013.799	9471.1055	231710.38
36	23712.374	403995.992	5648305.433	9248.8038	222239.27
37	22693.202	381302.790	5244309.441	9031.4993	212990.47
38	21713.407	359589.383	4863006.651	8819.1082	203958.97
39	20771.315	338818.068	4503417.268	8611.2853	195139.86
40	19865.580	318952.488	4164599.200	8407.9645	186528.57
41	18994.913	299957.575	3845646.712	8209.0789	178120.61
42	18157.820	281799.755	3545689.137	8014.3254	169911.53
43	17352.658	264447.097	3263889.382	7823.1962	161897.20
44	16577.227	247869.870	2999442.285	7634.5685	154074.01
45	15829.291	232040.579	2751572.415	7447.2157	146439.44
46	15107.229	216933.350	2519531.836	7260.4454	138992.22
47	14408.955	202524.395	2302598.486	7073.0428	131731.78
48	13733.534	188790.861	2100074.091	6884.8807	124658.74
49	13079.903	175710.958	1911283.230	6695.6688	117773.86
50	12447.253	163263.705	1735572.272	6505.3351	111078.19
51	11834.648	151429.057	1572308.567	6313.6529	104572.85
52	11241.219	140187.838	1420879.510	6120.4296	98259.198
53	10666.156	129521.682	1280691.672	5925.5042	92138.769
54	10108.704	119412.978	1151169.990	5728.7445	86213.264

TABLE XI.

LIFE ANNUITIES AND ASSURANCES—SINGLE LIVES.

Preparatory Table for determining the values of Annuities and Assurances for the whole term of Life, or for temporary and deferred periods, according to the combined experience of various Life Offices.

($3\frac{1}{2}$ PER CENT.)

Age.	D	N	S	M	R
55	9568.466	109844.512	1031757.012	5530.3468	80484.520
56	9044.613	100799.899	921912.500	5330.0643	74954.173
57	8536.663	92263.236	821112.601	5127.9699	69624.109
58	8044.429	84218.807	728849.365	4924.4150	64496.139
59	7567.316	76651.491	644630.558	4719.3355	59571.724
60	7104.894	69546.597	567979.067	4512.8134	54852.388
61	6656.385	62890.212	498432.470	4304.5676	50339.575
62	6221.555	56668.657	435542.258	4094.8323	46035.007
63	5800.049	50868.608	378873.601	3883.7174	41940.175
64	5391.860	45476.748	328004.993	3671.6667	38056.458
65	4996.846	40479.902	282528.245	3458.9849	34384.791
66	4615.050	35864.852	242048.343	3246.1637	30925.806
67	4246.677	31618.175	206183.491	3033.8549	27679.642
68	3891.866	27726.309	174565.316	2822.6526	24645.788
69	3551.075	24175.234	146839.007	2613.4700	21823.135
70	3224.832	20950.402	122663.773	2407.3118	19209.665
71	2913.463	18036.939	101713.371	2204.9952	16802.353
72	2617.449	15419.490	83676.432	2007.5041	14597.358
73	2337.229	13082.261	68256.942	1815.7987	12589.854
74	2073.285	11008.976	55174.681	1630.8898	10774.055
75	1825.959	9183.017	44165.705	1453.6734	9143.1653
76	1595.621	7587.396	34982.688	1285.0851	7689.4919
77	1382.596	6204.800	27395.292	1126.0173	6404.4068
78	1186.937	5017.863	21190.492	977.1121	5278.3895
79	1008.672	4009.191	16172.629	838.9866	4301.2774
80	847.806	3161.385	12163.438	712.2303	3462.2908
81	704.125	2457.260	9002.0527	597.2182	2750.0605
82	577.2904	1879.9697	6544.7926	494.1945	2152.8423
83	466.7443	1413.2254	4664.8229	403.1702	1658.6478
84	371.6310	1041.5944	3251.5975	323.8407	1255.4776
85	290.9572	750.6372	2210.0031	255.7341	931.6369
86	223.4621	527.1751	1459.3659	198.0782	675.9028
87	167.8707	359.3044	932.1908	150.0435	477.8246
88	122.9051	236.39934	572.8864	110.7546	327.7810
89	87.24784	149.15150	336.48707	79.25367	217.0264
90	59.65039	89.50111	187.33557	54.60661	137.7727
91	38.97561	50.52550	97.83446	35.94900	83.16612
92	24.06371	26.46179	47.30896	22.35512	47.21712
93	13.82760	12.63419	20.84717	12.93277	24.86200
94	7.25145	5.38274	8.21298	6.82421	11.92923
95	3.38888	1.99386	2.83024	3.20686	5.10502
96	1.36122	0.63264	0.83638	1.29379	1.89816
97	0.46209	0.17055	0.20374	0.44070	0.60437
98	0.13737	0.03318	0.03318	0.13161	0.16367
99	0.03318	0.00000	0.00000	0.03206	0.03206

TABLE XII.

LIFE ANNUITIES—SINGLE LIVES.

Shewing the Values of Annuities on Single Lives according to the combined experience of various Life Offices.

Age.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent.	4 ℔ Cent.
10	28.762	25.832	23.356	21.253	19.454
11	28.537	25.658	23.220	21.147	19.369
12	28.306	25.479	23.080	21.036	19.282
13	28.070	25.295	22.936	20.922	19.191
14	27.829	25.106	22.787	20.804	19.096
15	27.583	24.912	22.633	20.682	18.998
16	27.331	24.713	22.475	20.555	18.896
17	27.074	24.509	22.313	20.424	18.790
18	26.812	24.300	22.146	20.290	18.681
19	26.545	24.086	21.974	20.151	18.567
20	26.272	23.867	21.797	20.007	18.451
21	25.995	23.643	21.616	19.860	18.329
22	25.712	23.414	21.430	19.708	18.204
23	25.423	23.180	21.239	19.551	18.075
24	25.129	22.941	21.043	19.389	17.941
25	24.830	22.696	20.842	19.223	17.803
26	24.525	22.446	20.635	19.052	17.660
27	24.214	22.190	20.423	18.875	17.512
28	23.898	21.928	20.205	18.693	17.360
29	23.576	21.661	19.982	18.506	17.202
30	23.248	21.388	19.754	18.314	17.040
31	22.914	21.109	19.519	18.116	16.872
32	22.575	20.824	19.279	17.912	16.698
33	22.230	20.533	19.032	17.703	16.520
34	21.878	20.236	18.780	17.487	16.335
35	21.521	19.932	18.521	17.265	16.144
36	21.157	19.622	18.255	17.037	15.948
37	20.787	19.305	17.983	16.802	15.744
38	20.410	18.981	17.703	16.561	15.534
39	20.026	18.650	17.417	16.312	15.317
40	19.636	18.312	17.123	16.055	15.093
41	19.238	17.966	16.821	15.791	14.861
42	18.833	17.613	16.512	15.519	14.621
43	18.422	17.252	16.195	15.240	14.374
44	18.004	16.885	15.870	14.952	14.119
45	17.581	16.512	15.540	14.658	13.857
46	17.155	16.134	15.204	14.360	13.590
47	16.725	15.752	14.864	14.055	13.317
48	16.294	15.367	14.519	13.747	13.039
49	15.860	14.979	14.171	13.434	12.757
50	15.424	14.588	13.820	13.116	12.470
51	14.988	14.195	13.465	12.795	12.179
52	14.550	13.800	13.107	12.471	11.884
53	14.112	13.403	12.747	12.143	11.585
54	13.675	13.005	12.385	11.813	11.283

TABLE XII.

LIFE ANNUITIES—SINGLE LIVES.

Shewing the Values of Annuities on Single Lives according to the combined experience of various Life Offices.

Age.	4½ ℔' Cent.	5 ℔' Cent.	6 ℔' Cent.	7 ℔' Cent.	8 ℔' Cent.
10	17.902	16.556	14.347	12.625	11.251
11	17.835	16.502	14.312	12.601	11.234
12	17.765	16.445	14.274	12.575	11.216
13	17.692	16.386	14.234	12.547	11.196
14	17.616	16.324	14.193	12.518	11.175
15	17.536	16.259	14.149	12.487	11.153
16	17.453	16.192	14.102	12.454	11.129
17	17.367	16.121	14.054	12.420	11.104
18	17.278	16.048	14.003	12.384	11.078
19	17.185	15.971	13.950	12.346	11.050
20	17.089	15.891	13.894	12.306	11.021
21	16.989	15.808	13.836	12.264	10.990
22	16.885	15.722	13.775	12.220	10.957
23	16.778	15.632	13.712	12.174	10.923
24	16.666	15.539	13.645	12.125	10.887
25	16.551	15.442	13.576	12.074	10.849
26	16.431	15.341	13.503	12.020	10.809
27	16.307	15.236	13.427	11.964	10.767
28	16.178	15.127	13.347	11.905	10.722
29	16.045	15.014	13.264	11.843	10.675
30	15.907	14.896	13.177	11.778	10.625
31	15.764	14.774	13.087	11.710	10.573
32	15.616	14.647	12.992	11.638	10.518
33	15.463	14.515	12.893	11.563	10.460
34	15.304	14.378	12.789	11.484	10.398
35	15.139	14.235	12.681	11.401	10.333
36	14.969	14.087	12.568	11.313	10.264
37	14.792	13.933	12.450	11.221	10.191
38	14.609	13.773	12.326	11.124	10.114
39	14.419	13.606	12.196	11.022	10.032
40	14.223	13.433	12.060	10.914	9.945
41	14.018	13.252	11.918	10.800	9.853
42	13.806	13.064	11.768	10.680	9.755
43	13.586	12.868	11.612	10.553	9.652
44	13.359	12.666	11.448	10.420	9.543
45	13.126	12.456	11.279	10.281	9.428
46	12.886	12.241	11.104	10.137	9.308
47	12.641	12.020	10.923	9.988	9.182
48	12.391	11.794	10.737	9.833	9.053
49	12.135	11.563	10.546	9.674	8.918
50	11.875	11.326	10.349	9.509	8.779
51	11.611	11.085	10.148	9.338	8.635
52	11.342	10.840	9.942	9.164	8.486
53	11.069	10.590	9.731	8.985	8.332
54	10.792	10.336	9.515	8.801	8.174

TABLE XII.

LIFE ANNUITIES—SINGLE LIVES.

Shewing the Values of Annuities on Single Lives according to the combined experience of various Life Offices.

Age.	2 ℔ Cent.	2½ ℔ Cent.	3 ℔ Cent.	3½ ℔ Cent.	4 ℔ Cent.
55	13.238	12.606	12.021	11.480	10.978
56	12.801	12.207	11.656	11.145	10.670
57	12.366	11.808	11.290	10.808	10.359
58	11.933	11.409	10.923	10.469	10.046
59	11.501	11.011	10.555	10.129	9.731
60	11.072	10.614	10.188	9.788	9.415
61	10.647	10.220	9.822	9.448	9.098
62	10.226	9.829	9.457	9.108	8.780
63	9.810	9.441	9.096	8.770	8.464
64	9.400	9.058	8.737	8.434	8.149
65	8.996	8.680	8.382	8.101	7.835
66	8.599	8.307	8.032	7.771	7.525
67	8.210	7.941	7.686	7.445	7.217
68	7.828	7.581	7.347	7.124	6.913
69	7.455	7.228	7.013	6.808	6.613
70	7.091	6.883	6.685	6.497	6.317
71	6.735	6.545	6.364	6.191	6.026
72	6.388	6.214	6.049	5.891	5.740
73	6.050	5.892	5.742	5.597	5.459
74	5.721	5.578	5.441	5.310	5.184
75	5.402	5.273	5.148	5.029	4.915
76	5.093	4.975	4.863	4.755	4.651
77	4.792	4.687	4.585	4.488	4.394
78	4.501	4.406	4.315	4.228	4.143
79	4.220	4.135	4.053	3.975	3.899
80	3.947	3.872	3.799	3.729	3.661
81	3.684	3.617	3.553	3.490	3.429
82	3.428	3.369	3.312	3.256	3.203
83	3.179	3.127	3.077	3.028	2.980
84	2.935	2.890	2.846	2.803	2.761
85	2.694	2.655	2.617	2.580	2.544
86	2.457	2.424	2.391	2.359	2.328
87	2.223	2.195	2.167	2.140	2.114
88	1.992	1.969	1.946	1.923	1.901
89	1.766	1.747	1.728	1.709	1.691
90	1.545	1.531	1.516	1.500	1.485
91	1.331	1.321	1.309	1.296	1.284
92	1.129	1.119	1.109	1.100	1.090
93	0.936	0.928	0.921	0.914	0.906
94	0.759	0.753	0.748	0.742	0.737
95	0.601	0.596	0.592	0.588	0.584
96	0.474	0.471	0.468	0.465	0.462
97	0.376	0.373	0.371	0.369	0.367
98	0.245	0.244	0.243	0.242	0.240
99					

TABLE XII.

LIFE ANNUITIES—SINGLE LIVES.

Shewing the Values of Annuities on Single Lives according to the combined experience of various Life Offices.

Age.	4½ ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.	7 ℔ Cent.	8 ℔ Cent.
55	10.512	10.077	9.295	8.612	8.011
56	10.228	9.816	9.071	8.419	7.844
57	9.941	9.550	8.843	8.221	7.672
58	9.651	9.282	8.611	8.019	7.495
59	9.359	9.010	8.375	7.813	7.314
60	9.064	8.735	8.136	7.603	7.129
61	8.769	8.459	7.893	7.390	6.940
62	8.472	8.182	7.649	7.174	6.748
63	8.176	7.903	7.403	6.955	6.553
64	7.879	7.625	7.156	6.735	6.355
65	7.584	7.347	6.908	6.513	6.156
66	7.291	7.070	6.660	6.291	5.955
67	7.000	6.795	6.413	6.067	5.753
68	6.712	6.521	6.167	5.844	5.551
69	6.428	6.251	5.922	5.622	5.348
70	6.146	5.983	5.678	5.400	5.145
71	5.869	5.718	5.437	5.179	4.942
72	5.596	5.457	5.198	4.960	4.740
73	5.327	5.200	4.962	4.742	4.540
74	5.063	4.947	4.729	4.527	4.340
75	4.805	4.699	4.499	4.314	4.142
76	4.551	4.455	4.273	4.104	3.946
77	4.303	4.216	4.050	3.896	3.752
78	4.061	3.982	3.832	3.692	3.561
79	3.825	3.754	3.618	3.491	3.372
80	3.595	3.531	3.409	3.294	3.187
81	3.370	3.313	3.204	3.101	3.004
82	3.150	3.099	3.002	2.910	2.823
83	2.934	2.889	2.803	2.721	2.643
84	2.720	2.681	2.605	2.533	2.464
85	2.508	2.474	2.408	2.344	2.284
86	2.298	2.268	2.210	2.156	2.103
87	2.088	2.063	2.013	1.967	1.922
88	1.879	1.858	1.817	1.777	1.739
89	1.673	1.655	1.621	1.588	1.556
90	1.471	1.456	1.428	1.401	1.375
91	1.272	1.261	1.238	1.216	1.195
92	1.081	1.072	1.054	1.037	1.020
93	0.899	0.892	0.879	0.865	0.852
94	0.731	0.726	0.716	0.706	0.696
95	0.580	0.576	0.569	0.561	0.554
96	0.459	0.456	0.450	0.445	0.439
97	0.365	0.363	0.359	0.355	0.351
98	0.239	0.238	0.236	0.234	0.232
99					

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
10	10	21.510	19.726	18.179	16.832	14.602	12.851
11	11	21.349	19.595	18.072	16.744	14.542	12.808
12	12	21.183	19.460	17.961	16.652	14.478	12.763
13	13	21.011	19.320	17.846	16.556	14.411	12.715
14	14	20.834	19.175	17.726	16.456	14.341	12.664
15	10	21.048	19.353	17.874	16.578	14.426	12.726
	15	20.652	19.026	17.602	16.353	14.268	12.611
16	11	20.873	19.210	17.756	16.480	14.357	12.676
	16	20.465	18.872	17.474	16.246	14.192	12.555
17	12	20.693	19.062	17.633	16.378	14.285	12.624
	17	20.274	18.713	17.342	16.135	14.112	12.497
18	13	20.508	18.909	17.506	16.272	14.210	12.569
	18	20.078	18.550	17.205	16.020	14.029	12.436
19	14	20.318	18.751	17.375	16.162	14.131	12.511
	19	19.877	18.382	17.064	15.901	13.943	12.372
20	10	20.458	18.866	17.472	16.243	14.190	12.556
	15	20.123	18.589	17.239	16.048	14.049	12.451
	20	19.671	18.209	16.919	15.778	13.853	12.305
21	11	20.267	18.708	17.340	16.133	14.111	12.498
	16	19.923	18.422	17.099	15.930	13.964	12.388
	21	19.460	18.032	16.769	15.651	13.760	12.236
22	12	20.071	18.545	17.204	16.018	14.029	12.437
	17	19.718	18.251	16.955	15.808	13.875	12.322
	22	19.244	17.850	16.615	15.520	13.664	12.164
23	13	19.870	18.377	17.063	15.899	13.943	12.373
	18	19.508	18.075	16.806	15.682	13.783	12.253
	23	19.023	17.663	16.456	15.384	13.564	12.089
24	14	19.663	18.204	16.917	15.776	13.853	12.307
	19	19.293	17.893	16.653	15.552	13.687	12.181
	24	18.797	17.471	16.293	15.244	13.460	12.010
25	10	19.722	18.255	16.960	15.811	13.881	12.329
	15	19.451	18.026	16.767	15.649	13.760	12.237
	20	19.073	17.707	16.495	15.417	13.587	12.106
	25	18.566	17.274	16.125	15.100	13.352	11.928
26	11	19.512	18.079	16.811	15.685	13.789	12.261

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
26	16	19.234	17.843	16.612	15.517	13.663	12.164
	21	18.848	17.516	16.332	15.278	13.484	12.028
	26	18.329	17.072	15.952	14.951	13.240	11.843
27	12	19.296	17.898	16.658	15.554	13.693	12.190
	17	19.012	17.655	16.452	15.381	13.562	12.088
	22	18.617	17.320	16.165	15.134	13.377	11.947
	27	18.087	16.865	15.774	14.797	13.124	11.754
28	13	19.075	17.711	16.499	15.419	13.593	12.115
	18	18.784	17.462	16.287	15.240	13.457	12.009
	23	18.381	17.119	15.993	14.986	13.266	11.862
	28	17.840	16.652	15.591	14.638	13.003	11.661
29	14	18.848	17.519	16.335	15.279	13.489	12.037
	19	18.551	17.264	16.118	15.094	13.348	11.926
	24	18.140	16.913	15.816	14.833	13.151	11.774
	29	17.587	16.434	15.403	14.474	12.878	11.564
30	10	18.827	17.500	16.321	15.270	13.484	12.032
	15	18.616	17.321	16.166	15.134	13.381	11.955
	20	18.313	17.060	15.943	14.944	13.235	11.840
	25	17.894	16.701	15.634	14.675	13.031	11.682
	30	17.329	16.211	15.209	14.305	12.749	11.463
31	11	18.594	17.302	16.152	15.125	13.376	11.950
	16	18.378	17.118	15.992	14.984	13.269	11.869
	21	18.069	16.851	15.763	14.789	13.118	11.750
	26	17.642	16.484	15.446	14.512	12.907	11.586
	31	17.065	15.982	15.010	14.131	12.615	11.358
32	12	18.355	17.098	15.977	14.975	13.263	11.864
	17	18.134	16.909	15.813	14.829	13.152	11.779
	22	17.820	16.637	15.578	14.629	12.996	11.656
	27	17.385	16.262	15.253	14.344	12.778	11.486
	32	16.796	15.748	14.805	13.952	12.476	11.249
33	13	18.110	16.888	15.797	14.819	13.145	11.774
	18	17.885	16.695	15.628	14.669	13.031	11.685
	23	17.565	16.417	15.388	14.464	12.870	11.558
	28	17.122	16.034	15.055	14.171	12.645	11.382
	33	16.521	15.508	14.595	13.767	12.332	11.135
34	14	17.859	16.672	15.611	14.658	13.023	11.679
	19	17.630	16.475	15.438	14.504	12.905	11.587
	24	17.305	16.192	15.192	14.294	12.739	11.456
	29	16.853	15.800	14.851	13.992	12.507	11.273
	34	16.240	15.262	14.379	13.577	12.183	11.017
35	10	17.765	16.593	15.544	14.600	12.978	11.647

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
35	15	17.602	16.450	15.419	14.491	12.896	11.580
	20	17.369	16.249	15.242	14.333	12.774	11.485
	25	17.039	15.961	14.991	14.118	12.603	11.349
	30	16.578	15.560	14.641	13.808	12.363	11.160
	35	15.953	15.010	14.157	13.381	12.028	10.893
36	11	17.505	16.368	15.349	14.431	12.848	11.546
	16	17.339	16.222	15.221	14.318	12.763	11.476
	21	17.102	16.017	15.040	14.157	12.638	11.378
	26	16.767	15.724	14.784	13.936	12.462	11.238
	31	16.298	15.315	14.425	13.618	12.214	11.042
	36	15.660	14.752	13.928	13.178	11.867	10.764
37	12	17.238	16.137	15.148	14.255	12.713	11.440
	17	17.069	15.988	15.017	14.139	12.625	11.368
	22	16.829	15.779	14.832	13.975	12.497	11.267
	27	16.489	15.481	14.571	13.749	12.315	11.122
	32	16.011	15.063	14.203	13.422	12.060	10.919
	37	15.360	14.487	13.693	12.969	11.700	10.629
38	13	16.964	15.899	14.940	14.073	12.572	11.329
	18	16.792	15.747	14.806	13.954	12.481	11.255
	23	16.549	15.535	14.618	13.787	12.350	11.150
	28	16.204	15.231	14.351	13.555	12.163	11.001
	33	15.718	14.805	13.975	13.220	11.900	10.791
	38	15.053	14.215	13.451	12.753	11.526	10.488
39	14	16.683	15.654	14.725	13.884	12.425	11.212
	19	16.509	15.499	14.589	13.763	12.331	11.136
	24	16.263	15.284	14.397	13.592	12.197	11.028
	29	15.913	14.975	14.125	13.355	12.005	10.874
	34	15.419	14.540	13.740	13.011	11.734	10.657
	39	14.740	13.936	13.202	12.530	11.346	10.341
40	10	16.518	15.509	14.598	13.772	12.341	11.147
	15	16.395	15.402	14.503	13.688	12.271	11.090
	20	16.219	15.244	14.365	13.565	12.175	11.011
	25	15.970	15.026	14.170	13.391	12.038	10.901
	30	15.615	14.712	13.892	13.148	11.841	10.742
	35	15.113	14.268	13.498	12.795	11.561	10.517
	40	14.419	13.649	12.945	12.299	11.158	10.187
41	11	16.225	15.251	14.371	13.571	12.183	11.021
	16	16.100	15.142	14.274	13.485	12.111	10.962
	21	15.922	14.982	14.134	13.360	12.012	10.880
	26	15.670	14.761	13.936	13.183	11.872	10.767
	31	15.310	14.442	13.652	12.934	11.670	10.604
	36	14.800	13.989	13.249	12.572	11.381	10.370
	41	14.091	13.354	12.680	12.060	10.963	10.025
42	12	15.924	14.986	14.136	13.363	12.018	10.888

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
42	17	15.797	14.875	14.037	13.275	11.944	10.827
	22	15.618	14.713	13.895	13.148	11.843	10.743
	27	15.363	14.489	13.694	12.968	11.699	10.627
	32	14.998	14.165	13.405	12.713	11.492	10.459
	37	14.480	13.703	12.993	12.342	11.194	10.216
	42	13.755	13.051	12.407	11.813	10.759	9.856
43	13	15.615	14.713	13.893	13.147	11.845	10.748
	18	15.487	14.600	13.793	13.057	11.770	10.686
	23	15.306	14.437	13.649	12.928	11.667	10.600
	28	15.049	14.210	13.445	12.745	11.519	10.481
	33	14.679	13.881	13.151	12.485	11.307	10.308
	38	14.152	13.409	12.729	12.104	10.999	10.055
	43	13.411	12.740	12.126	11.558	10.547	9.679
44	14	15.299	14.433	13.643	12.924	11.665	10.602
	19	15.170	14.318	13.542	12.832	11.589	10.538
	24	14.988	14.154	13.396	12.702	11.484	10.451
	29	14.729	13.924	13.189	12.516	11.333	10.328
	34	14.354	13.590	12.890	12.250	11.116	10.150
	39	13.818	13.108	12.458	11.859	10.797	9.887
	44	13.061	12.423	11.838	11.295	10.328	9.495
45	10	15.067	14.226	13.462	12.761	11.533	10.494
	15	14.977	14.146	13.387	12.695	11.479	10.450
	20	14.848	14.030	13.285	12.601	11.402	10.385
	25	14.665	13.865	13.137	12.470	11.295	10.296
	30	14.403	13.633	12.927	12.281	11.141	10.170
	35	14.024	13.293	12.623	12.009	10.918	9.986
	40	13.478	12.801	12.180	11.607	10.588	9.713
	45	12.706	12.100	11.544	11.027	10.103	9.304
46	11	14.741	13.935	13.201	12.527	11.343	10.338
	16	14.650	13.854	13.125	12.460	11.287	10.292
	21	14.520	13.737	13.022	12.364	11.209	10.226
	26	14.337	13.571	12.873	12.232	11.100	10.135
	31	14.073	13.336	12.660	12.040	10.943	10.006
	36	13.689	12.991	12.350	11.762	10.714	9.816
	41	13.132	12.488	11.896	11.349	10.373	9.532
	46	12.348	11.773	11.245	10.753	9.872	9.108
47	12	14.411	13.639	12.935	12.288	11.147	10.177
	17	14.319	13.557	12.858	12.219	11.090	10.129
	22	14.189	13.440	12.754	12.123	11.011	10.062
	27	14.005	13.273	12.604	11.989	10.900	9.969
	32	13.739	13.035	12.388	11.794	10.740	9.837
	37	13.350	12.685	12.073	11.510	10.505	9.641
	42	12.782	12.170	11.606	11.085	10.152	9.345
	47	11.988	11.444	10.943	10.476	9.637	8.907
48	13	14.076	13.338	12.664	12.043	10.946	10.010

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
48	18	13.984	13.256	12.586	11.974	10.888	9.961
	23	13.854	13.138	12.482	11.877	10.808	9.893
	28	13.669	12.970	12.331	11.741	10.695	9.798
	33	13.401	12.730	12.112	11.544	10.532	9.664
	38	13.007	12.374	11.791	11.253	10.291	9.461
	43	12.427	11.847	11.311	10.815	9.925	9.152
	48	11.627	11.113	10.638	10.196	9.399	8.702
49	14	13.738	13.033	12.389	11.794	10.740	9.838
	19	13.645	12.951	12.310	11.724	10.681	9.788
	24	13.516	12.833	12.206	11.626	10.600	9.720
	29	13.330	12.664	12.053	11.489	10.486	9.623
	34	13.060	12.421	11.832	11.289	10.319	9.485
	39	12.660	12.059	11.504	10.991	10.072	9.275
	44	12,069	11.520	11.011	10.540	9.692	8.953
	49	11.265	10.780	10.331	9.913	9.156	8.493
50	10	13.461	12.783	12.161	11.588	10.570	9.696
	15	13.396	12.724	12.109	11.540	10.529	9.661
	20	13.303	12.642	12.030	11.469	10.469	9.610
	25	13.174	12.524	11.925	11.371	10.388	9.541
	30	12.988	12.354	11.771	11.233	10.272	9.443
	35	12.716	12.108	11.548	11.030	10.102	9.301
	40	12.310	11.740	11.212	10.724	9.847	9.084
	45	11.709	11.190	10.708	10.261	9.454	8.749
	50	10.902	10.446	10.022	9.627	8.910	8.280
51	11	13.116	12.471	11.878	11.330	10.355	9.515
	16	13.051	12.411	11.825	11.281	10.313	9.479
	21	12.958	12.329	11.746	11.210	10.253	9.428
	26	12.829	12.211	11.640	11.112	10.171	9.358
	31	12.643	12.041	11.486	10.973	10.053	9.258
	36	12.369	11.792	11.260	10.766	9.880	9.113
	41	11.956	11.417	10.916	10.452	9.617	8.888
	46	11.347	10.857	10.401	9.978	9.212	8.541
	51	10.539	10.111	9.712	9.339	8.661	8.063
52	12	12.768	12.155	11.591	11.068	10.135	9.329
	17	12.703	12.095	11.537	11.018	10.092	9.292
	22	12.611	12.013	11.458	10.947	10.032	9.241
	27	12.482	11.895	11.352	10.849	9.950	9.170
	32	12.296	11.725	11.197	10.708	9.830	9.069
	37	12.020	11.473	10.968	10.498	9.653	8.920
	42	11.599	11.090	10.616	10.175	9.381	8.686
	47	10.984	10.523	10.093	9.693	8.966	8.329
	52	10.177	9.776	9.401	9.049	8.409	7.843
53	13	12.418	11.836	11.300	10.801	9.911	9.138
	18	12.353	11.776	11.245	10.751	9.867	9.101
	23	12.262	11.694	11.167	10.680	9.807	9.049
	28	12.133	11.576	11.061	10.582	9.724	8.978

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
53	33	11.947	11.406	10.905	10.440	9.603	8.876
	38	11.668	11.151	10.672	10.226	9.422	8.722
	43	11.240	10.760	10.312	9.894	9.140	8.479
	48	10.621	10.188	9.783	9.405	8.718	8.113
	53	9.816	9.441	9.089	8.758	8.156	7.621
54	14	12.066	11.514	11.005	10.531	9.682	8.943
	19	12.001	11.454	10.950	10.481	9.638	8.905
	24	11.911	11.373	10.873	10.410	9.578	8.854
	29	11.782	11.255	10.767	10.312	9.494	8.782
	34	11.596	11.085	10.610	10.169	9.372	8.678
	39	11.314	10.826	10.373	9.950	9.187	8.519
	44	10.879	10.427	10.004	9.609	8.895	8.266
	49	10.259	9.853	9.472	9.116	8.467	7.894
	54	9.457	9.106	8.776	8.466	7.900	7.395
55	10	11.755	11.232	10.746	10.294	9.479	8.770
	15	11.712	11.189	10.707	10.257	9.449	8.743
	20	11.647	11.130	10.652	10.207	9.405	8.705
	25	11.558	11.049	10.576	10.136	9.345	8.653
	30	11.430	10.932	10.470	10.038	9.260	8.581
	35	11.244	10.761	10.312	9.894	9.137	8.475
	40	10.958	10.499	10.071	9.671	8.947	8.312
	45	10.517	10.092	9.694	9.321	8.646	8.050
	50	9.898	9.517	9.160	8.825	8.214	7.672
	55	9.099	8.772	8.464	8.174	7.642	7.167
56	11	11.400	10.906	10.446	10.017	9.243	8.567
	16	11.356	10.862	10.406	9.980	9.212	8.539
	21	11.292	10.804	10.352	9.930	9.168	8.501
	26	11.204	10.724	10.276	9.859	9.108	8.449
	31	11.077	10.607	10.170	9.761	9.023	8.376
	36	10.891	10.436	10.012	9.616	8.899	8.269
	41	10.601	10.169	9.766	9.388	8.703	8.100
	46	10.155	9.756	9.382	9.031	8.394	7.830
	51	9.538	9.182	8.847	8.533	7.958	7.447
	56	8.745	8.440	8.153	7.882	7.384	6.938
57	12	11.043	10.578	10.143	9.737	9.003	8.359
	17	11.000	10.534	10.103	9.700	8.971	8.331
	22	10.936	10.476	10.049	9.650	8.928	8.293
	27	10.849	10.397	9.974	9.580	8.868	8.241
	32	10.723	10.281	9.868	9.482	8.783	8.168
	37	10.537	10.109	9.709	9.336	8.656	8.058
	42	10.243	9.837	9.458	9.102	8.455	7.884
	47	9.794	9.420	9.069	8.740	8.140	7.607
	52	9.181	8.848	8.535	8.241	7.701	7.219
	57	8.393	8.110	7.842	7.590	7.124	6.706
58	13	10.685	10.248	9.837	9.454	8.759	8.147
	18	10.642	10.204	9.797	9.417	8.727	8.119

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
58	23	10.580	10.147	9.744	9.367	8.683	8.081
	28	10.494	10.068	9.670	9.299	8.624	8.029
	33	10.369	9.953	9.565	9.200	8.539	7.955
	38	10.182	9.780	9.404	9.052	8.410	7.843
	43	9.883	9.503	9.147	8.813	8.203	7.662
	48	9.434	9.084	8.756	8.447	7.883	7.380
	53	8.824	8.515	8.223	7.948	7.442	6.990
	58	8.043	7.781	7.533	7.298	6.864	6.473
59	14	10.327	9.916	9.529	9.168	8.511	7.931
	19	10.284	9.873	9.490	9.131	8.479	7.903
	24	10.223	9.817	9.437	9.082	8.436	7.865
	29	10.138	9.739	9.364	9.014	8.377	7.813
	34	10.015	9.625	9.259	8.916	8.292	7.739
	39	9.827	9.450	9.097	8.766	8.161	7.625
	44	9.523	9.168	8.834	8.521	7.947	7.437
	49	9.075	8.749	8.442	8.154	7.624	7.151
	54	8.471	8.183	7.911	7.655	7.182	6.758
	59	7.697	7.455	7.225	7.007	6.603	6.238
60	10	10.109	9.611	9.246	8.905	8.282	7.730
	15	9.969	9.583	9.220	8.880	8.260	7.711
	20	9.926	9.541	9.181	8.844	8.229	7.683
	25	9.866	9.486	9.129	8.795	8.186	7.646
	30	9.783	9.409	9.057	8.728	8.127	7.594
	35	9.661	9.295	8.952	8.630	8.041	7.519
	40	9.472	9.119	8.788	8.477	7.908	7.402
	45	9.164	8.833	8.521	8.227	7.689	7.209
	50	8.719	8.415	8.129	7.860	7.364	6.920
	55	8.120	7.853	7.601	7.362	6.921	6.524
	60	7.355	7.131	6.919	6.717	6.342	6.003
61	11	9.643	9.278	8.936	8.615	8.029	7.508
	16	9.612	9.250	8.910	8.590	8.007	7.489
	21	9.569	9.209	8.872	8.555	7.976	7.461
	26	9.511	9.155	8.821	8.507	7.933	7.423
	31	9.429	9.079	8.750	8.440	7.875	7.372
	36	9.308	8.966	8.645	8.343	7.789	7.296
	41	9.117	8.788	8.479	8.187	7.653	7.177
	46	8.807	8.498	8.207	7.933	7.429	6.978
	51	8.365	8.084	7.818	7.566	7.103	6.687
	56	7.774	7.527	7.293	7.071	6.661	6.290
	61	7.018	6.812	6.616	6.429	6.083	5.767
62	12	9.287	8.946	8.626	8.325	7.774	7.283
	17	9.256	8.918	8.600	8.300	7.752	7.263
	22	9.214	8.878	8.563	8.265	7.721	7.236
	27	9.157	8.825	8.512	8.218	7.679	7.199
	32	9.077	8.750	8.442	8.152	7.621	7.147
	37	8.957	8.638	8.338	8.055	7.535	7.072
	42	8.763	8.457	8.168	7.896	7.396	6.948

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
62	47	8.453	8.166	7.895	7.639	7.168	6.745
	52	8.016	7.755	7.508	7.274	6.843	6.453
	57	7.432	7.204	6.987	6.782	6.401	6.055
	62	6.687	6.497	6.317	6.145	5.825	5.532
63	13	8.933	8.616	8.317	8.035	7.518	7.056
	18	8.903	8.588	8.290	8.010	7.496	7.036
	23	8.862	8.549	8.254	7.976	7.465	7.009
	28	8.806	8.496	8.205	7.930	7.424	6.972
	33	8.727	8.423	8.136	7.865	7.367	6.921
	38	8.608	8.311	8.031	7.767	7.280	6.845
	43	8.412	8.127	7.859	7.605	7.137	6.717
	48	8.103	7.837	7.585	7.347	6.907	6.511
	53	7.671	7.430	7.201	6.984	6.582	6.219
	58	7.095	6.884	6.685	6.495	6.142	5.821
	63	6.362	6.188	6.022	5.864	5.569	5.299
64	14	8.582	8.287	8.008	7.745	7.261	6.827
	19	8.553	8.259	7.982	7.720	7.239	6.807
	24	8.513	8.221	7.946	7.687	7.209	6.781
	29	8.458	8.170	7.898	7.641	7.168	6.744
	34	8.381	8.098	7.830	7.577	7.112	6.693
	39	8.262	7.986	7.725	7.479	7.025	6.616
	44	8.063	7.799	7.550	7.313	6.877	6.484
	49	7.757	7.510	7.277	7.056	6.647	6.277
	54	7.331	7.108	6.897	6.696	6.323	5.985
	59	6.763	6.570	6.385	6.210	5.884	5.586
	64	6.044	5.885	5.733	5.588	5.316	5.067
65	10	8.255	7.979	7.719	7.473	7.019	6.611
	15	8.235	7.961	7.701	7.456	7.004	6.597
	20	8.206	7.933	7.675	7.432	6.982	6.578
	25	8.167	7.897	7.641	7.399	6.953	6.551
	30	8.114	7.847	7.594	7.354	6.913	6.515
	35	8.039	7.775	7.527	7.291	6.857	6.465
	40	7.919	7.664	7.421	7.192	6.768	6.386
	45	7.718	7.474	7.243	7.024	6.618	6.251
	50	7.416	7.188	6.973	6.768	6.388	6.043
	55	6.997	6.791	6.596	6.410	6.065	5.751
	60	6.437	6.260	6.091	5.929	5.628	5.353
	65	5.734	5.588	5.450	5.317	5.068	4.838
66	11	7.912	7.656	7.414	7.185	6.762	6.380
	16	7.892	7.637	7.397	7.168	6.747	6.367
	21	7.864	7.611	7.371	7.145	6.726	6.347
	26	7.826	7.575	7.338	7.113	6.697	6.321
	31	7.775	7.527	7.292	7.069	6.658	6.286
	36	7.700	7.457	7.226	7.007	6.602	6.236
	41	7.581	7.344	7.120	6.907	6.512	6.156
	46	7.379	7.153	6.939	6.736	6.359	6.017
	51	7.081	6.871	6.672	6.482	6.130	5.810

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
66	56	6.668	6.480	6.300	6.129	5.810	5.518
	61	6.118	5.956	5.801	5.653	5.376	5.122
	66	5.431	5.299	5.173	5.051	4.823	4.612
67	12	7.573	7.336	7.112	6.900	6.506	6.150
	17	7.553	7.318	7.095	6.883	6.491	6.136
	22	7.526	7.292	7.070	6.860	6.470	6.117
	27	7.490	7.258	7.038	6.829	6.442	6.092
	32	7.440	7.210	6.993	6.786	6.404	6.057
	37	7.367	7.141	6.928	6.725	6.348	6.007
	42	7.246	7.028	6.820	6.623	6.257	5.925
	47	7.044	6.837	6.639	6.451	6.102	5.784
	52	6.752	6.559	6.375	6.200	5.874	5.577
	57	6.347	6.174	6.009	5.851	5.557	5.287
	62	5.807	5.658	5.516	5.381	5.126	4.892
	67	5.138	5.018	4.902	4.792	4.583	4.390
68	13	7.240	7.021	6.814	6.617	6.251	5.920
	18	7.220	7.003	6.797	6.601	6.236	5.906
	23	7.194	6.978	6.773	6.578	6.216	5.887
	28	7.159	6.945	6.741	6.548	6.189	5.862
	33	7.111	6.899	6.698	6.507	6.151	5.828
	38	7.038	6.831	6.633	6.445	6.096	5.779
	43	6.917	6.715	6.524	6.342	6.003	5.694
	48	6.717	6.525	6.343	6.170	5.847	5.552
	53	6.429	6.252	6.083	5.922	5.622	5.347
	58	6.032	5.874	5.722	5.578	5.307	5.058
	63	5.503	5.368	5.238	5.114	4.881	4.666
	68	4.853	4.744	4.639	4.539	4.349	4.172
69	14	6.912	6.711	6.520	6.337	5.999	5.690
	19	6.893	6.693	6.503	6.321	5.984	5.677
	24	6.868	6.669	6.480	6.300	5.964	5.659
	29	6.834	6.637	6.449	6.270	5.937	5.634
	34	6.787	6.592	6.407	6.230	5.901	5.601
	39	6.716	6.525	6.343	6.169	5.846	5.551
	44	6.592	6.408	6.231	6.063	5.750	5.464
	49	6.396	6.220	6.053	5.893	5.595	5.322
	54	6.114	5.952	5.797	5.649	5.372	5.118
	59	5.724	5.580	5.441	5.309	5.060	4.832
	64	5.208	5.085	4.967	4.854	4.641	4.444
	69	4.578	4.479	4.384	4.293	4.120	3.959
70	10	6.602	6.417	6.240	6.071	5.757	5.471
	15	6.590	6.405	6.229	6.061	5.748	5.462
	20	6.572	6.388	6.212	6.045	5.733	5.449
	25	6.548	6.364	6.190	6.024	5.714	5.431
	30	6.515	6.333	6.160	5.996	5.688	5.407
	35	6.469	6.290	6.119	5.957	5.652	5.374
	40	6.399	6.223	6.056	5.896	5.597	5.325
	45	6.274	6.105	5.943	5.788	5.500	5.235

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Older.	Younger.	Per Cent	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
70	50	6.081	5.920	5.767	5.620	5.346	5.094
	55	5.806	5.657	5.516	5.380	5.126	4.892
	60	5.424	5.292	5.166	5.045	4.817	4.607
	65	4.921	4.809	4.702	4.599	4.405	4.225
	70	4.311	4.222	4.136	4.054	3.897	3.751
71	11	6.286	6.116	5.954	5.799	5.509	5.244
	16	6.274	6.105	5.943	5.788	5.499	5.235
	21	6.257	6.088	5.927	5.773	5.485	5.222
	26	6.233	6.066	5.905	5.753	5.466	5.205
	31	6.202	6.036	5.877	5.725	5.441	5.181
	36	6.158	5.994	5.837	5.687	5.407	5.150
	41	6.088	5.927	5.773	5.626	5.351	5.099
	46	5.963	5.808	5.659	5.518	5.252	5.008
	51	5.774	5.627	5.487	5.352	5.100	4.868
	56	5.505	5.370	5.240	5.116	4.883	4.668
	61	5.132	5.012	4.897	4.787	4.579	4.386
	66	4.643	4.542	4.445	4.351	4.175	4.010
	71	4.054	3.974	3.896	3.822	3.680	3.547
72	12	5.977	5.821	5.672	5.530	5.263	5.018
	17	5.965	5.810	5.662	5.520	5.254	5.010
	22	5.948	5.794	5.646	5.505	5.240	4.997
	27	5.926	5.772	5.626	5.485	5.222	4.980
	32	5.896	5.744	5.598	5.459	5.198	4.958
	37	5.853	5.703	5.559	5.422	5.164	4.927
	42	5.783	5.636	5.495	5.360	5.108	4.875
	47	5.659	5.517	5.381	5.251	5.008	4.783
	52	5.474	5.340	5.212	5.089	4.858	4.645
	57	5.212	5.089	4.971	4.858	4.645	4.447
	62	4.847	4.739	4.634	4.534	4.345	4.169
	67	4.374	4.283	4.195	4.110	3.950	3.800
	72	3.806	3.734	3.664	3.597	3.469	3.348
73	13	5.675	5.532	5.396	5.266	5.021	4.795
	18	5.663	5.521	5.385	5.255	5.011	4.787
	23	5.647	5.506	5.371	5.241	4.998	4.774
	28	5.625	5.485	5.351	5.222	4.981	4.758
	33	5.597	5.458	5.324	5.197	4.957	4.737
	38	5.555	5.418	5.287	5.161	4.924	4.706
	43	5.484	5.350	5.221	5.098	4.867	4.653
	48	5.362	5.233	5.109	4.990	4.767	4.561
	53	5.182	5.061	4.944	4.832	4.621	4.425
	58	4.927	4.815	4.708	4.605	4.411	4.230
	63	4.572	4.474	4.379	4.288	4.116	3.955
	68	4.114	4.032	3.953	3.876	3.731	3.595
	73	3.568	3.503	3.440	3.380	3.264	3.155
74	14	5.379	5.249	5.125	5.006	4.782	4.575
	19	5.368	5.238	5.115	4.996	4.772	4.566
	24	5.352	5.224	5.100	4.982	4.760	4.554
	29	5.332	5.204	5.082	4.964	4.743	4.539

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
74	34	5.304	5.178	5.056	4.940	4.720	4.518
	39	5.264	5.139	5.019	4.904	4.688	4.488
	44	5.192	5.070	4.953	4.841	4.629	4.433
	49	5.073	4.955	4.843	4.735	4.531	4.342
	54	4.898	4.788	4.682	4.580	4.387	4.208
	59	4.649	4.548	4.451	4.358	4.181	4.016
	64	4.305	4.216	4.131	4.048	3.892	3.746
	69	3.864	3.790	3.718	3.649	3.518	3.395
	74	3.338	3.280	3.224	3.170	3.066	2.968
75	10	5.097	4.979	4.866	4.757	4.552	4.362
	15	5.090	4.973	4.860	4.751	4.546	4.357
	20	5.080	4.962	4.850	4.741	4.537	4.348
	25	5.065	4.948	4.836	4.728	4.525	4.337
	30	5.045	4.929	4.818	4.711	4.509	4.322
	35	5.019	4.904	4.794	4.688	4.487	4.302
	40	4.980	4.866	4.757	4.653	4.455	4.272
	45	4.907	4.797	4.691	4.588	4.395	4.217
	50	4.791	4.685	4.583	4.485	4.299	4.127
	55	4.622	4.522	4.426	4.333	4.158	3.995
	60	4.380	4.289	4.201	4.116	3.956	3.806
	65	4.047	3.967	3.890	3.815	3.674	3.542
	70	3.623	3.556	3.492	3.430	3.311	3.200
	75	3.118	3.066	3.016	2.967	2.874	2.786
76	11	4.816	4.709	4.607	4.508	4.321	4.147
	16	4.809	4.703	4.600	4.501	4.315	4.142
	21	4.799	4.693	4.590	4.492	4.306	4.134
	26	4.785	4.679	4.577	4.480	4.295	4.123
	31	4.767	4.661	4.560	4.463	4.279	4.108
	36	4.742	4.638	4.537	4.441	4.258	4.089
	41	4.703	4.600	4.501	4.406	4.226	4.059
	46	4.630	4.530	4.434	4.341	4.166	4.003
	51	4.518	4.422	4.329	4.240	4.072	3.915
	56	4.354	4.264	4.177	4.093	3.934	3.786
	61	4.119	4.037	3.958	3.881	3.736	3.600
	66	3.798	3.726	3.657	3.589	3.462	3.342
	71	3.390	3.331	3.274	3.218	3.111	3.011
	76	2.907	2.861	2.816	2.773	2.689	2.610
77	12	4.542	4.446	4.353	4.263	4.093	3.935
	17	4.535	4.439	4.346	4.257	4.087	3.930
	22	4.526	4.429	4.337	4.248	4.079	3.922
	27	4.512	4.417	4.325	4.236	4.068	3.911
	32	4.495	4.400	4.308	4.220	4.053	3.898
	37	4.471	4.377	4.287	4.199	4.034	3.879
	42	4.433	4.340	4.251	4.164	4.001	3.849
	47	4.361	4.271	4.184	4.100	3.941	3.793
	52	4.252	4.166	4.082	4.002	3.849	3.707
	57	4.094	4.013	3.935	3.859	3.716	3.581
	62	3.867	3.793	3.722	3.653	3.522	3.399
	67	3.557	3.493	3.431	3.371	3.256	3.148

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
77	72	3.167	3.114	3.063	3.013	2.918	2.828
	77	2.704	2.664	2.624	2.585	2.511	2.440
78	13	4.276	4.189	4.105	4.024	3.870	3.727
	18	4.269	4.182	4.099	4.018	3.865	3.721
	23	4.260	4.173	4.090	4.010	3.857	3.714
	28	4.247	4.161	4.078	3.998	3.846	3.704
	33	4.231	4.146	4.063	3.983	3.832	3.691
	38	4.209	4.124	4.042	3.963	3.813	3.673
	43	4.170	4.086	4.006	3.928	3.780	3.642
	48	4.100	4.019	3.940	3.865	3.721	3.587
	53	3.995	3.917	3.842	3.770	3.632	3.503
	58	3.843	3.770	3.699	3.631	3.502	3.380
	63	3.623	3.557	3.493	3.431	3.313	3.202
	68	3.326	3.269	3.213	3.159	3.056	2.959
	73	2.954	2.906	2.861	2.816	2.731	2.650
	78	2.511	2.475	2.440	2.405	2.339	2.276
79	14	4.017	3.939	3.864	3.791	3.652	3.522
	19	4.011	3.933	3.858	3.785	3.647	3.517
	24	4.002	3.924	3.849	3.777	3.639	3.510
	29	3.990	3.913	3.838	3.766	3.629	3.500
	34	3.975	3.898	3.824	3.752	3.616	3.488
	39	3.954	3.878	3.804	3.733	3.598	3.471
	44	3.914	3.840	3.767	3.697	3.564	3.440
	49	3.847	3.774	3.704	3.636	3.506	3.385
	54	3.746	3.677	3.609	3.544	3.420	3.304
	59	3.599	3.534	3.471	3.410	3.294	3.184
	64	3.388	3.329	3.272	3.216	3.111	3.011
	69	3.105	3.054	3.004	2.956	2.863	2.776
	74	2.749	2.707	2.666	2.626	2.550	2.478
	79	2.327	2.295	2.264	2.234	2.175	2.119
80	10	3.770	3.700	3.632	3.567	3.442	3.325
	15	3.766	3.696	3.629	3.563	3.439	3.322
	20	3.760	3.690	3.623	3.558	3.433	3.317
	25	3.752	3.682	3.615	3.550	3.426	3.310
	30	3.741	3.672	3.605	3.540	3.417	3.301
	35	3.727	3.658	3.591	3.527	3.404	3.289
	40	3.706	3.638	3.572	3.508	3.387	3.272
	45	3.667	3.600	3.535	3.473	3.353	3.241
	50	3.602	3.537	3.474	3.413	3.297	3.187
	55	3.505	3.443	3.383	3.325	3.213	3.109
	60	3.364	3.306	3.250	3.195	3.091	2.993
	65	3.162	3.109	3.058	3.009	2.914	2.825
	70	2.892	2.846	2 802	2.759	2.677	2.599
	75	2.553	2.516	2.480	2.445	2.377	2.313
	80	2.152	2.124	2.096	2.069	2.017	1.968
81	11	3.526	3.464	3.403	3.345	3.233	3.128
	16	3.522	3.460	3.400	3.341	3.230	3.125
	21	3.516	3.454	3.394	3.336	3.225	3.120

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		$2\frac{1}{2}$ Per Cent.	3 Per Cent.	$3\frac{1}{2}$ Per Cent.	4 Per Cent.	5 Per Cent.	6 Per Cent.
Older.	Younger.						
81	26	3.509	3.447	3.387	3.329	3.218	3.113
	31	3.499	3.437	3.377	3.320	3.209	3.105
	36	3.485	3.424	3.365	3.307	3.197	3.094
	41	3.465	3.405	3.346	3.289	3.180	3.078
	46	3.426	3.367	3.309	3.253	3.146	3.046
	51	3.364	3.306	3.250	3.196	3.092	2.994
	56	3.272	3.217	3.164	3.112	3.012	2.918
	61	3.137	3.085	3.035	2.987	2.894	2.806
	66	2.944	2.897	2.852	2.808	2.724	2.644
	71	2.688	2.648	2.608	2.570	2.497	2.428
	76	2.366	2.334	2.302	2.270	2.210	2.153
	81	1.985	1.961	1.936	1.913	1.867	1.823
82	12	3.288	3.233	3.179	3.127	3.028	2.934
	17	3.285	3.229	3.176	3.124	3.025	2.931
	22	3.279	3.224	3.171	3.119	3.020	2.926
	27	3.272	3.217	3.164	3.112	3.013	2.920
	32	3.263	3.208	3.155	3.104	3.005	2.912
	37	3.250	3.196	3.143	3.092	2.994	2.902
	42	3.231	3.177	3.125	3.074	2.977	2.886
	47	3.193	3.140	3.089	3.039	2.944	2.854
	52	3.134	3.082	3.033	2.984	2.892	2.805
	57	3.046	2.998	2.950	2.904	2.815	2.732
	62	2.917	2.871	2.827	2.784	2.701	2.623
	67	2.734	2.693	2.653	2.614	2.539	2.468
	72	2.492	2.456	2.421	2.388	2.323	2.261
	77	2.187	2.158	2.130	2.103	2.050	1.999
	82	1.826	1.804	1.783	1.762	1.722	1.684
83	13	3.055	3.007	2.959	2.913	2.825	2.742
	18	3.052	3.003	2.956	2.910	2.822	2.739
	23	3.047	2.998	2.951	2.906	2.818	2.734
	28	3.040	2.992	2.945	2.899	2.812	2.729
	33	3.032	2.983	2.937	2.891	2.804	2.721
	38	3.020	2.972	2.926	2.881	2.794	2.712
	43	3.001	2.954	2.908	2.863	2.777	2.696
	48	2.964	2.918	2.873	2.829	2.745	2.665
	53	2.908	2.863	2.820	2 777	2.695	2.618
	58	2.826	2.783	2.741	2·700	2.622	2.548
	63	2.703	2.663	2.624	2.586	2.513	2.444
	68	2.530	2.494	2 459	2.425	2.359	2.296
	73	2.302	2.271	2.241	2.211	2.154	2.099
	78	2.015	1.990	1.965	1.941	1.894	1.850
	83	1.673	1.654	1.636	1.618	1.582	1.549
84	14	2.826	2.784	2.742	2.702	2.624	2.551
	19	2.823	2.781	2 739	2.699	2.621	2.548
	24	2.819	2.776	2.735	2.695	2.617	2.544
	29	2.813	2.770	2.729	2.689	2.612	2.539
	34	2.805	2.762	2.721	2.682	2.605	2.532
	39	2.794	2.752	2.711	2.672	2.595	2.523
	44	2.775	2.734	2.693	2.654	2.579	2.507

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½	3	3½	4	5	6
Older.	Younger.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
84	49	2.740	2.700	2.660	2.622	2.548	2.477
	54	2.688	2.648	2.610	2.573	2.501	2.433
	59	2.610	2.573	2.536	2.500	2.432	2.366
	64	2.494	2.459	2.425	2.392	2.328	2.267
	69	2.333	2.301	2.270	2.240	2.182	2.127
	74	2.119	2.092	2.065	2.039	1.989	1.941
	79	1.850	1.828	1.806	1.785	1.744	1.705
	84	1.525	1.509	1.493	1.477	1.447	1.417
85	15	2.600	2.563	2.527	2.492	2.424	2.360
	20	2.597	2.560	2.524	2.489	2.421	2.357
	25	2.593	2.556	2.520	2.485	2.418	2.354
	30	2.587	2.551	2.515	2.480	2.413	2.349
	35	2.580	2.544	2.508	2.473	2.406	2.343
	40	2.570	2.534	2.499	2.464	2.398	2.334
	45	2.552	2.516	2.481	2.447	2.381	2.318
	50	2.519	2.484	2.450	2.416	2.352	2.290
	55	2.470	2.436	2.403	2.370	2.308	2.248
	60	2.398	2.365	2.333	2.302	2.242	2.185
	65	2.290	2.259	2.229	2.201	2.145	2.091
	70	2.139	2.112	2.085	2.059	2.008	1.960
	75	1.940	1.917	1.894	1.871	1.828	1.786
	80	1.689	1.670	1.652	1.633	1.598	1.564
	85	1.381	1.367	1.353	1.339	1.313	1.288
86	16	2.376	2.344	2.313	2.283	2.225	2.169
	21	2.373	2.342	2.311	2.280	2.222	2.166
	26	2.370	2.338	2.307	2.277	2.219	2.163
	31	2.365	2.333	2.302	2.272	2.214	2.159
	36	2.358	2.327	2.296	2.266	2.208	2.153
	41	2.349	2.318	2.287	2.258	2.200	2.145
	46	2.331	2.300	2.270	2.241	2.184	2.129
	51	2.301	2.271	2.241	2.212	2.157	2.103
	56	2.256	2.227	2.198	2.170	2.116	2.064
	61	2.188	2.160	2.133	2.106	2.055	2.005
	66	2 088	2.062	2.037	2.012	1.964	1.918
	71	1.950	1.926	1.903	1.881	1.837	1.796
	76	1.766	1.746	1.726	1.707	1.669	1.633
	81	1.534	1.518	1.502	1.486	1.456	1.426
	86	1.239	1.228	1.216	1.205	1.182	1.161
87	17	2.154	2.127	2.101	2.075	2.025	1.977
	22	2.152	2.125	2.099	2.073	2.023	1.975
	27	2.149	2.122	2.095	2.070	2.020	1.972
	32	2.144	2.117	2.091	2.065	2.016	1.968
	37	2.139	2.112	2.086	2.060	2.011	1.963
	42	2.130	2.104	2.078	2.052	2.003	1.956
	47	2.113	2.087	2.061	2.036	1.987	1.941
	52	2.085	2.060	2.034	2.010	1.962	1.917
	57	2.044	2.019	1.995	1.971	1.925	1.881
	62	1.982	1.958	1.935	1.912	1.868	1.826
	67	1.891	1.868	1.847	1.825	1.784	1.745

TABLE XIII.

LIFE ANNUITIES—JOINT LIVES.

Shewing the Values of Annuities on Two Joint Lives according to the combined experience of various Life Offices.

Age.		2½ Per Cent.	3 Per Cent.	3½ Per Cent.	4 Per Cent.	5 Per Cent.	6 Per Cent.
Older.	Younger.						
87	72	1.764	1.744	1.725	1.705	1.668	1.633
	77	1.596	1.579	1.562	1.545	1.513	1.482
	82	1.383	1.370	1.356	1.342	1.316	1.291
	87	1.101	1.092	1.082	1.072	1.054	1.036
88	18	1.935	1.912	1.890	1.868	1.826	1.786
	23	1.933	1.910	1.888	1.866	1.824	1.784
	28	1.930	1.907	1.885	1.863	1.822	1.781
	33	1.926	1.903	1.881	1.860	1.818	1.778
	38	1.921	1.899	1.877	1.855	1.813	1.773
	43	1.913	1.891	1.869	1.848	1.806	1.766
	48	1.897	1.875	1.854	1.832	1.791	1.752
	53	1.872	1.851	1.830	1.809	1.769	1.730
	58	1.835	1.814	1.794	1.774	1.735	1.697
	63	1.779	1.759	1.739	1.720	1.683	1.647
	68	1.696	1.678	1.659	1.641	1.607	1.573
	73	1.582	1.565	1.549	1.533	1.501	1.471
	78	1.430	1.415	1.401	1.387	1.360	1.334
	83	1.236	1.225	1.213	1.202	1.180	1.158
	88	0.966	0.958	0.950	0.942	0.927	0.912
89	19	1.719	1.700	1.682	1.664	1.629	1.595
	24	1.717	1.698	1.680	1.662	1.627	1.593
	29	1.714	1.696	1.677	1.659	1.625	1.591
	34	1.711	1.692	1.674	1.656	1.621	1.588
	39	1.707	1.688	1.670	1.652	1.617	1.584
	44	1.699	1.681	1.663	1.645	1.611	1.577
	49	1.685	1.667	1.649	1.631	1.597	1.564
	54	1.663	1.645	1.627	1.610	1.577	1.545
	59	1.630	1.612	1.595	1.579	1.546	1.515
	64	1.579	1.563	1.546	1.530	1.499	1.470
	69	1.506	1.490	1.475	1.460	1.431	1.403
	74	1.404	1.390	1.376	1.363	1.337	1.311
	79	1.268	1.256	1.244	1.232	1.210	1.188
	84	1.093	1.083	1.074	1.064	1.046	1.028
	89	0.834	0.828	0.821	0.815	0.802	0.790
90	20	1.508	1.492	1.477	1.463	1.434	1.407
	25	1.506	1.491	1.476	1.461	1.433	1.405
	30	1.504	1.489	1.474	1.459	1.431	1.403
	35	1.501	1.486	1.471	1.456	1.428	1.401
	40	1.497	1.482	1.467	1.453	1.424	1.397
	45	1.490	1.475	1.461	1.446	1.418	1.391
	50	1.478	1.463	1.448	1.434	1.406	1.379
	55	1.458	1.444	1.430	1.415	1.388	1.362
	60	1.439	1.415	1.401	1.388	1.361	1.336
	65	1.385	1.371	1.358	1.345	1.320	1.295
	70	1.320	1.308	1.295	1.283	1.259	1.237
	75	1.231	1.220	1.209	1.197	1.176	1.155
	80	1.111	1.101	1.092	1.082	1.063	1.045
	85	0.954	0.946	0.938	0.930	0.915	0.900
	90	0·708	0.703	0.697	0.692	0.682	0.673

TABLE XIV.

ABSOLUTE REVERSIONS—PRESENT VALUES.

Shewing the Present Value of £1, to be received at the end of the year in which an Assigned Life may fail, according to the Mortality obtained from the combined experience of various Life Offices.

Age.	4 ℔ Cent	5 ℔ Cent.	6 ℔ Cent.	Age.	4 ℔ Cent.	5 ℔ Cent.	6 ℔ Cent.
10	.21331	.16401	.13131	55	.53932	.47253	.41727
11	.21658	.16658	.13328	56	.55115	.48496	.42994
12	.21982	.16930	.13544	57	.56312	.49762	.44285
13	.22341	.17211	.13770	58	.57515	.51039	.45597
14	.22707	.17506	.14002	59	.58727	.52333	.46934
15	.23084	.17816	.14252	60	.59943	.53643	.48286
16	.23476	.18135	.14517	61	.61162	.54959	.49663
17	.23884	.18472	.14789	62	.62385	.56277	.51045
18	.24303	.18820	.15077	63	.63600	.57606	.52436
19	.24742	.19187	.15377	64	.64811	.58929	.53834
20	.25188	.19568	.15695	65	.66019	.60254	.55238
21	.25657	.19963	.16022	66	.67211	.61572	.56641
22	.26138	.20373	.16368	67	.68396	.62882	.58039
23	.26634	.20801	.16724	68	.69566	.64186	.59432
24	.27149	.21244	.17104	69	.70720	.65472	.60820
25	.27680	.21707	.17494	70	.71858	.66749	.62201
26	.28229	.22187	.17907	71	.72977	.68011	.63565
27	.28798	.22687	.18338	72	.74077	.69254	.64918
28	.29384	.23206	.18791	73	.75159	.70477	.66253
29	.29991	.23743	.19260	74	.76216	.71682	.67573
30	.30614	.24306	.19752	75	.77251	.72862	.68874
31	.31261	.24886	.20262	76	.78265	.74024	.70153
32	.31931	.25491	.20801	77	.79254	.75162	.71415
33	.32615	.26118	.21361	78	.80219	.76276	.72649
34	.33327	.26772	.21950	79	.81157	.77362	.73860
35	.34061	.27452	.22560	80	.82072	.78423	.75044
36	.34816	.28156	.23200	81	.82965	.79462	.76204
37	.35600	.28891	.23868	82	.83835	.80481	.77347
38	.36408	.29653	.24570	83	.84693	.81482	.78474
39	.37242	.30447	.25306	84	.85535	.82471	.79595
40	.38104	.31271	.26075	85	.86369	.83458	.80710
41	.38996	.32134	.26879	86	.87200	.84438	.81830
42	.39918	.33028	.27728	87	.88022	.85414	.82945
43	.40869	.33962	.28611	88	.88843	.86391	.84055
44	.41849	.34923	.29540	89	.89650	.87357	.85164
45	.42857	.35925	.30497	90	.90444	.88306	.86257
46	.43884	.36948	.31487	91	.91216	.89233	.87332
47	.44934	.38000	.32512	92	.91962	.90134	.88374
48	.46004	.39077	.33565	93	.92670	.90992	.89366
49	.47088	.40176	.34646	94	.93320	.91782	.90287
50	.48192	.41306	.35762	95	.93908	.92496	.91120
51	.49311	.42452	.36899	96	.94378	.93068	.91792
52	.50446	.43620	.38065	97	.94743	.93510	.92309
53	.51597	.44810	.39258	98	.95231	.94106	.93004
54	.52759	.46020	.40481				

TABLE XV.

LIFE ASSURANCES—SINGLE LIVES.

Shewing the Single and Annual Premium for the Assurance of £1 on a Single Life, according to the Mortality obtained from the combined experience of various Life Offices, reckoning Interest at 3 per cent.

Age.	Single Premium.	Annual Premium.	Age.	Single Premium.	Annual Premium.
10	.29061	.01193	55	.62075	.04767
11	.29456	.01216	56	.63139	.04988
12	.29863	.01240	57	.64205	.05224
13	.30284	.01265	58	.65274	.05474
14	.30718	.01291	59	.66344	.05741
15	.31165	.01318	60	.67414	.06025
16	.31625	.01347	61	.68480	.06328
17	.32099	.01376	62	.69541	.06649
18	.32585	.01408	63	.70595	.06992
19	.33086	.01440	64	.71640	.07357
20	.33600	.01473	65	.72673	.07745
21	.34128	.01508	66	.73694	.08159
22	.34669	.01545	67	.74700	.08599
23	.35226	.01583	68	.75689	.09068
24	.35797	.01624	69	.76662	.09567
25	.36383	.01665	70	.77617	.10100
26	.36985	.01709	71	.78553	.10668
27	.37603	.01755	72	.79469	.11274
28	.38236	.01803	73	.80364	.11921
29	.38886	.01853	74	.81239	.12612
30	.39552	.01905	75	.82092	.13352
31	.40235	.01960	76	.82923	.14143
32	.40936	.02018	77	.83732	.14991
33	.41654	.02079	78	.84518	.15900
34	.42389	.02143	79	.85281	.16875
35	.43144	.02210	80	.86021	.17924
36	.43917	.02280	81	.86740	.19053
37	.44710	.02355	82	.87440	.20278
38	.45524	.02434	83	.88126	.21616
39	.46358	.02517	84	.88799	.23091
40	.47214	.02605	85	.89465	.24734
41	.48093	.02698	86	.90123	.26577
42	.48995	.02797	87	.90774	.28658
43	.49919	.02903	88	.91419	.31029
44	.50863	.03014	89	.92053	.33740
45	.51826	.03133	90	.92673	.36837
46	.52804	.03258	91	.93276	.40404
47	.53795	.03391	92	.93857	.44498
48	.54798	.03530	93	.94405	.49143
49	.55812	.03678	94	.94910	.54302
50	.56836	.03835	95	.95362	.59885
51	.57870	.04000	96	.95726	.65219
52	.58912	.04176	97	.96005	.70014
53	.59960	.04361	98	.96382	.77558
54	.61015	.04558			

TABLE XVI.

LIFE ASSURANCES—JOINT LIVES.

Shewing the Single and Annual Premium required to secure a Sum payable at the decease of the first of Two Assigned Lives, according to the combined experience of various Life Offices, reckoning interest at 3 per Cent.

Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.	Age.		Annual Premium per Cent.	Annual Prem. per £1	Single Prem. per £1
Older.	Younger.				Older.	Younger.			
14	14	2 0 11	.02044	.41238	**27**	12	2 7 7	.02379	.44958
						17	2 9 0	.02448	.45665
15	10	2 0 0	.02000	.40719		22	2 10 11	.02546	.46641
	15	2 1 7	.02080	41673		27	2 13 8	02685	.47966
16	11	2 0 8	.02035	.41137	**28**	13	2 8 8	.02432	.45503
	16	2 2 5	.02119	.42121		18	2 10 1	.02504	.46227
						23	2 12 1	.02606	.47227
17	12	2 1 5	.02072	41567		28	2 15 1	.02753	.48587
	17	2 3 2	.02160	.42585					
					29	14	2 9 9	.02487	.46062
18	13	2 2 2	.02110	.42014		19	2 11 3	.02563	.46804
	18	2 4 0	.02202	43059		24	2 13 5	.02670	.47827
						29	2 16 6	.02823	.49222
19	14	2 3 0	.02150	.42474					
	19	2 4 11	.02247	.43548	**30**	10	2 9 10	.02493	.46117
						15	2 10 11	.02545	.46638
20	10	2 2 5	.02121	.42139		20	2 12 6	.02624	.47398
	15	2 3 10	.02192	.42946		25	2 14 9	.02737	.48444
	20	2 5 10	.02293	.44053		30	2 18 0	.02898	.49872
21	11	2 3 3	.02161	.42600	**31**	11	2 11 0	.02551	.46693
	16	2 4 9	.02236	.43432		16	2 12 2	.02607	.47230
	21	2 6 10	.02342	44568		21	2 13 9	.02689	.48007
						26	2 16 2	.02807	.49076
22	12	2 4 1	.02204	.43074		31	2 19 6	.02976	.50539
	17	2 5 8	.02282	.43930					
	22	2 7 10	.02392	45097	**32**	12	2 12 3	.02613	.47288
						17	2 13 5	.02671	.47840
23	13	2 5 0	.02248	.43568		22	2 15 2	.02758	.48631
	18	2 6 7	02329	.44442		27	2 17 7	.02880	.49723
	23	2 8 11	.02445	.45642		32	3 1 2	.03058	.51220
24	14	2 5 11	.02294	44067	**33**	13	2 13 7	.02678	47900
	19	2 7 7	.02380	.44972		18	2 14 9	.02739	.48462
	24	2 10 0	.02501	.46201		23	2 16 7	.02829	.49272
						28	2 19 2	.02958	.50387
25	10	2 5 7	.02281	.43918		33	3 2 11	.03145	.51919
	15	2 6 10	.02343	.44586					
	20	2 8 8	.02433	.45515	**34**	14	2 14 11	.02746	.48529
	25	2 11 2	.02559	.46775		19	2 16 2	.02810	.49102
						24	2 18 1	.02904	.49927
26	11	2 6 7	.02329	.44431		29	3 0 9	.03039	.51068
	16	2 7 11	.02395	.45118		34	3 4 9	.03237	.52635
	21	2 9 9	02488	.46071					
	26	2 12 5	.02621	.47363	**35**	10	2 15 5	.02771	.48759

TABLE XVI.

LIFE ~~ANNUITIES~~—JOINT LIVES.

Shewing the Single and Annual Premium required to secure a Sum payable at the decease of the first of two Assigned Lives, according to the combined experience of various Life Offices, reckoning Interest at 3 per Cent.

Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.	Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.
Older.	Younger.				Older.	Younger.			
35	15	2 16 4	.02818	.49175	**41**	36	3 15 2	.03759	.56344
	20	2 17 8	.02885	.49761		41	4 1 1	.04054	.58192
	25	2 19 8	.02983	.50599					
	30	3 2 6	.03126	.51768	**42**	12	3 6 10	.03343	.53440
	35	3 6 8	.03333	.53369		17	3 7 9	.03387	.53762
						22	3 9 0	.03452	.54234
36	11	2 16 11	.02845	.49414		27	3 10 11	.03544	.54887
	16	2 17 11	.02894	.49840		32	3 13 8	.03682	.55830
	21	2 19 3	.02964	.50437		37	3 17 9	.03889	.57177
	26	3 1 4	.03067	.51290		42	4 4 1	.04204	.59075
	31	3 4 4	.03217	.52480					
	36	3 8 9	.03436	.54120	**43**	13	3 9 0	.03452	.54235
						18	3 10 0	.03498	.54564
37	12	2 18 6	.02923	.50088		23	3 11 4	.03565	.55039
	17	2 19 6	.02974	.50521		28	3 13 3	.03662	.55700
	22	3 1 0	.03048	.51130		33	3 16 2	.03808	.56658
	27	3 3 1	.03155	.51997		38	4 0 7	.04028	.58033
	32	3 6 3	.03313	.53214		43	4 7 4	.04366	.59981
	37	3 10 11	.03545	.54893					
					44	14	3 11 4	.03567	.55050
38	13	3 0 1	.03005	.50780		19	3 12 4	.03616	.55385
	18	3 1 2	.03059	.51224		24	3 13 9	.03686	.55862
	23	3 2 8	.03135	.51840		29	3 15 9	.03788	.56533
	28	3 5 0	.03248	.52724		34	3 18 10	.03941	.57506
	33	3 8 4	.03415	.53966		39	4 3 6	.04176	.58910
	38	3 13 2	.03660	.55685		44	4 10 9	.04537	.60904
39	14	3 1 10	.03092	.51493	**45**	10	3 13 1	.03655	.55654
	19	3 3 0	.03149	.51945		15	3 13 10	.03690	.55887
	24	3 4 7	.03228	.52571		20	3 14 10	.03741	.56224
	29	3 7 0	.03348	.53471		25	3 16 4	.03815	.56704
	34	3 10 5	.03522	.54739		30	3 18 5	.03921	.57381
	39	3 15 8	.03783	.56499		35	4 1 8	.04084	.58371
						40	4 6 8	.04333	.59803
40	10	3 2 11	.03145	.51916		45	4 14 5	.04721	.61845
	15	3 3 8	.03184	.52227					
	20	3 4 10	.03243	.52688	**46**	11	3 15 8	.03783	.56501
	25	3 6 6	.03327	.53323		16	3 16 5	.03820	.56736
	30	3 9 0	.03452	.54238		21	3 17 6	.03873	.57079
	35	3 12 9	.03637	.55531		26	3 19 0	.03950	.57561
	40	3 18 3	.03914	.57335		31	4 1 3	.04063	.58246
						36	4 4 8	.04235	.59250
41	11	3 4 10	.03241	.52667		41	4 10 0	.04501	.60715
	16	3 5 8	.03283	.52985		46	4 18 4	.04917	.62798
	21	3 6 11	.03345	.53451					
	26	3 8 8	.03432	.54095	**47**	12	3 18 5	.03919	.57363
	31	3 11 3	.03563	.55024		17	3 19 2	.03957	.57602

TABLE XVI.

LIFE ASSURANCES—JOINT LIVES.

Shewing the Single and Annual Premium required to secure a Sum payable at the decease of the first of two Assigned Lives, according to the combined experience of various Life Offices, reckoning Interest at 3 per Cent.

Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.
Older.	Younger.			
47	22	4 0 3	.04013	.57943
	27	4 1 11	.04094	.58429
	32	4 4 3	.04212	.59122
	37	4 7 11	.04395	.60140
	42	4 13 7	.04680	.61641
	47	5 2 6	.05124	.63755
48	13	4 1 3	.04062	.58240
	18	4 2 0	.04102	.58479
	23	4 3 3	.04161	.58823
	28	4 4 10	.04246	.59311
	33	4 7 5	.04371	.60011
	38	4 11 4	.04565	.61046
	43	4 17 5	.04871	.62583
	48	5 6 10	.05343	.64720
49	14	4 4 3	.04213	.59128
	19	4 5 1	.04255	.59366
	24	4 6 4	.04317	.59710
	29	4 8 1	.04406	.60202
	34	4 10 9	.04538	.60910
	39	4 14 11	.04745	.61964
	44	5 1 6	.05075	.63535
	49	5 11 6	.05577	.65690
50	10	4 6 10	.04343	.59856
	15	4 7 6	.04374	.60028
	20	4 8 4	.04418	.60266
	25	4 9 8	.04482	.60610
	30	4 11 6	.04576	.61104
	35	4 14 4	.04716	.61822
	40	4 18 9	.04937	.62894
	45	5 5 10	.05291	.64496
	50	5 16 6	.05824	.66663
51	11	4 10 3	.04511	.60764
	16	4 10 11	.04544	.60939
	21	4 11 10	.04590	.61178
	26	4 13 2	.04657	.61522
	31	4 15 1	.04756	.62017
	36	4 18 1	.04905	.62743
	41	5 2 10	.05141	.63835
	46	5 10 5	.05521	.65465
	51	6 1 9	.06088	.67638
52	12	4 13 9	.04689	.61684
	17	4 14 6	.04724	.61859
52	22	4 15 5	.04772	.62098
	27	4 16 10	.04842	.62442
	32	4 18 11	.04946	.62938
	37	5 2 1	.05105	.63671
	42	5 7 2	.05359	.64787
	47	5 15 4	.05766	.66438
	52	6 7 4	.06367	.68615
53	13	4 17 7	.04879	.62615
	18	4 18 3	.04915	.62790
	23	4 19 4	.04965	.63028
	28	5 0 9	.05039	.63372
	33	5 3 0	.05148	.63867
	38	5 6 4	.05317	.64609
	43	5 11 10	.05591	.65748
	48	6 0 6	.06026	.67414
	53	6 13 4	.06665	.69596
54	14	5 1 7	.05079	.63552
	19	5 2 4	.05117	.63726
	24	5 3 5	.05169	.63962
	29	5 4 11	.05247	.64306
	34	5 7 3	.05362	.64801
	39	5 10 10	.05543	.65556
	44	5 16 9	.05839	.66718
	49	6 6 0	.06301	.68389
	54	6 19 8	.06983	.70566
55	10	5 5 3	.05263	.64374
	15	5 5 10	.05292	.64499
	20	5 6 8	.05332	.64671
	25	5 7 9	.05387	.64907
	30	5 9 5	.05469	.65247
	35	5 11 10	.05590	.65745
	40	5 15 8	.05784	.66508
	45	6 2 1	.06103	.67693
	50	6 11 11	.06596	.69369
	55	7 6 5	.07321	.71538
56	11	5 9 9	.05487	.65323
	16	5 10 4	.05518	.65450
	21	5 11 2	.05559	.65619
	26	5 12 4	.05617	.65853
	31	5 14 1	.05703	.66194
	36	5 16 8	.05832	.66692
	41	6 0 10	.06041	.67469
	46	6 7 8	.06385	.68673

TABLE XVI.

LIFE ASSURANCES—JOINT LIVES.

Shewing the Single and Annual Premium required to secure a Sum payable at the decease of the first of two Assigned Lives, according to the combined experience of various Life Offices, reckoning Interest at 3 per cent.

Age.		Annual Premium per Cent.	Annual Prem. per £.	Single Prem. per £1.	Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.
Older.	Younger.				Older.	Younger.			
56	51	6 18 2	.06909	.70344	**61**	11	6 16 4	.06817	.70065
	56	7 13 7	.07681	.72505		16	6 16 11	.06844	.70146
						21	6 17 8	.06883	.70266
57	12	5 14 6	.05725	.66278		26	6 18 8	.06935	.70422
	17	5 15 2	.05758	.66406		31	7 0 2	.07009	.70644
	22	5 16 0	.05801	.66575		36	7 2 5	.07121	.70973
	27	5 17 3	.05862	.66805		41	7 6 1	.07304	.71492
	32	5 19 0	.05952	.67143		46	7 12 4	.07616	.72336
	37	6 1 9	.06089	.67644		51	8 1 11	.08096	.73542
	42	6 6 4	.06315	.68437		56	8 16 4	.08815	.75164
	47	6 13 8	.06684	.69651		61	9 17 9	.09888	.77246
	52	7 4 10	.07242	.71317					
	57	8 1 3	.08064	.73466	**62**	12	7 2 10	.07142	.71031
						17	7 3 5	.07170	.71113
58	13	5 19 7	.05978	.67239		22	7 4 3	.07211	.71229
	18	6 0 3	.06013	.67367		27	7 5 4	.07266	.71384
	23	6 1 2	.06059	.67534		32	7 6 11	.07344	.71602
	28	6 2 5	.06122	.67763		37	7 9 3	.07463	.71928
	33	6 4 4	.06217	.68098		42	7 13 3	.07662	.72456
	38	6 7 3	.06364	.68603		47	7 19 11	.07997	.73303
	43	6 12 2	06608	.69409		52	8 10 2	.08509	.74500
	48	7 0 1	.07004	.70629		57	9 5 6	.09277	.76105
	53	7 11 11	.07597	.72287		62	10 8 6	.10426	.78164
	58	8 9 6	.08475	.74424					
					63	13	7 9 9	.07487	.71992
59	14	6 5 0	.06249	.68207		18	7 10 4	.07517	.72074
	19	6 5 8	.06284	.68331		23	7 11 2	.07559	.72188
	24	6 6 8	.06332	.68495		28	7 12 4	.07618	.72342
	29	6 8 0	.06399	.68723		33	7 14 0	.07699	.72555
	34	6 10 0	.06499	.69054		38	7 16 6	.07827	.72881
	39	6 13 2	.06657	.69563		43	8 0 11	.08044	.73417
	44	6 18 5	.06922	.70385		48	8 8 1	.08404	.74261
	49	7 6 11	.07345	.71605		53	8 19 0	.08949	.75447
	54	7 19 6	.07977	.73254		58	9 15 5	.09771	.77037
	59	8 18 4	.08915	.75374		63	11 0 0	.11000	.79064
60	10	6 10 3	.06511	.69095	**64**	14	7 17 1	.07855	.72951
	15	6 10 9	.06537	.69176		19	7 17 9	.07888	.73032
	20	6 11 6	.06574	.69299		24	7 18 8	.07932	.73145
	25	6 12 6	.06624	.69459		29	7 19 10	.07993	.73292
	30	6 13 11	.06695	.69683		34	8 1 7	.08079	.73501
	35	6 16 0	.06800	.70015		39	8 4 4	.08216	.73827
	40	6 19 5	.06970	.70528		44	8 9 0	.08452	.74372
	45	7 5 2	.07257	.71360		49	8 16 9	.08838	.75214
	50	7 14 2	.07709	.72578		54	9 8 5	.09421	.76385
	55	8 7 8	.08383	.74215		59	10 6 0	.10298	.77952
	60	9 7 9	.09386	.76318		64	11 12 3	.11611	.79946

TABLE XVI.

LIFE ASSURANCES—JOINT LIVES.

Shewing the Single and Annual Premium required to secure a Sum payable at the decease of the first of two Assigned Lives according to the combined experience of various Life Offices, reckoning Interest at 3 per Cent.

Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.	Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.
Older.	Younger.				Older.	Younger.			
65	10	8 4 6	.08224	.73848	**68**	13	9 11 1	.09554	.76638
	15	8 4 11	.08247	.73900		18	9 11 8	.09582	.76691
	20	8 5 7	.08281	.73982		23	9 12 5	.09621	.76763
	25	8 6 6	.08327	.74087		28	9 13 5	.09673	.76859
	30	8 7 10	.08390	.74232		33	9 14 11	.09747	.76993
	35	8 9 8	.08483	.74442		38	9 17 2	.09857	.77191
	40	8 12 7	.08629	.74765		43	10 1 0	.10049	.77529
	45	8 17 9	.08888	.75319		48	10 7 6	.10376	.78083
	50	9 6 0	.09300	.76152		53	10 17 6	.10877	.78878
	55	9 18 5	.09922	.77308		58	11 12 8	.11635	.79979
	60	10 17 3	.10861	.78855		63	12 15 10	.12791	.81453
	65	12 5 4	.12266	.80812		68	14 9 11	.14497	.83270
66	11	8 12 10	.08640	.74788	**69**	14	10 1 1	.10056	.77541
	16	8 13 4	.08665	.74844		19	10 1 9	.10086	.77593
	21	8 14 0	.08700	.74920		24	10 2 6	.10126	.77663
	26	8 15 0	.08749	.75024		29	10 3 7	.10181	.77757
	31	8 16 3	.08814	.75164		34	10 5 2	.10259	.77888
	36	8 18 3	.08912	.75368		39	10 7 6	.10376	78083
	41	9 1 5	.09072	.75697		44	10 11 9	.10586	.78423
	46	9 7 0	.09352	.76254		49	10 18 9	.10937	.78971
	51	9 15 10	.09792	.77075		54	11 9 5	.11472	.79752
	56	10 9 1	.10456	.78214		59	12 5 8	.12285	.80835
	61	11 9 3	.11464	.79740		64	13 10 5	.13521	.82277
	66	12 19 3	.12963	.81654		69	15 6 9	.15339	.84042
67	12	9 1 8	.09084	.75721	**70**	10	10 11 5	.10569	.78397
	17	9 2 2	.09109	.75773		15	10 11 10	.10591	.78432
	22	9 2 11	.09147	.75849		20	10 12 5	.10622	.78482
	27	9 3 11	.09197	.75948		25	10 13 4	.10667	.78552
	32	9 5 4	.09267	.76088		30	10 14 6	.10724	.78642
	37	9 7 5	.09370	.76288		35	10 16 1	.10804	.78767
	42	9 10 10	.09543	.76618		40	10 18 8	.10932	.78962
	47	9 16 11	.09847	.77174		45	11 3 3	.11162	.79306
	52	10 6 4	.10317	.77984		50	11 10 9	.11538	.79845
	57	11 0 6	.11027	.79105		55	12 2 2	.12109	.80610
	62	12 2 2	.12107	.80608		60	12 19 7	.12980	.81674
	67	13 14 1	.13704	.82472		65	14 6 0	.14302	.83081
						70	16 4 9	.16237	.84791

TABLE XVII.

LIFE ASSURANCES—LAST SURVIVOR.

Shewing the Single and Annual Premium required to secure a Sum payable at the extinction of the last survivor of two Assigned Lives according to the combined experience of various Life Offices, reckoning Interest at 3 per Cent.

Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.
Older	Younger.			
14	14	0 14 9	.00737	.20198
15	10	0 14 1	.00705	.19509
	15	0 15 2	.00758	.20662
16	11	0 14 6	.00725	.19947
	16	0 15 7	.00780	.21133
17	12	0 14 11	.00746	.20396
	17	0 16 1	.00803	.21613
18	13	0 15 4	.00767	.20856
	18	0 16 6	.00827	.22113
19	14	0 15 9	.00789	.21331
	19	0 17 0	.00851	.22624
20	10	0 15 0	.00752	.20525
	15	0 16 3	.00813	.21823
	20	0 17 6	.00877	.23150
21	11	0 15 6	.00773	.20988
	16	0 16 9	.00837	.22324
	21	0 18 1	.00903	.23690
22	12	0 15 11	.00795	.21461
	17	0 17 3	.00862	.22839
	22	0 18 8	.00932	.24243
23	13	0 16 5	.00819	.21949
	18	0 17 9	.00888	.23369
	23	0 19 3	.00961	.24811
24	14	0 16 10	.00843	.22450
	19	0 18 4	.00915	.23911
	24	0 19 10	.00991	.25394
25	10	0 16 0	.00799	.21526
	15	0 17 4	.00868	.22965
	20	0 18 10	.00943	.24471
	25	1 0 5	.01022	.25991
26	11	0 16 5	.00822	.22013
	16	0 17 11	.00897	.23495
	21	0 19 6	.00973	.25045
	26	1 1 1	.01056	.26609
27	12	0 16 11	.00846	.22510
	17	0 18 5	.00921	.24036
	22	1 0 1	.01004	.25633
	27	1 1 10	.01090	.27241
28	13	0 17 5	.00871	.23020
	18	0 19 0	.00959	.24596
	23	1 0 9	.01036	.26238
	28	1 2 6	.01126	.27888
29	14	0 17 11	.00896	.23544
	19	0 19 7	.00979	.25170
	24	1 1 5	.01069	.26859
	29	1 3 3	.01164	.28553
30	10	0 16 11	.00844	.22496
	15	0 18 6	.00923	.24080
	20	1 0 2	.01010	.25755
	25	1 2 1	.01104	.27491
	30	1 4 1	.01203	.29234
31	11	0 17 5	.00870	.23000
	16	0 19 0	.00952	.24634
	21	1 0 10	.01042	.26358
	26	1 2 10	.01140	.28147
	31	1 4 11	.01244	.29935
32	12	0 17 11	.00895	.23512
	17	0 19 7	.00981	.25196
	22	1 1 6	.01075	.26975
	27	1 3 7	.01179	.28817
	32	1 5 9	.01287	.30651
33	13	0 18 5	.00921	.24039
	18	1 0 3	.01011	.25778
	23	1 2 2	.01110	.27610
	28	1 4 5	.01219	.29507
	33	1 6 8	.01332	.31388
34	14	0 19 0	.00948	.24578
	19	1 0 10	.01043	.26373
	24	1 2 11	.01147	.28261
	29	1 5 3	.01261	.30208
	34	1 7 7	.01379	.32143
35	10	0 17 10	.00890	.23445

TABLE XVII.

LIFE ASSURANCES—LAST SURVIVOR.

Shewing the Single and Annual Premium required to secure a Sum payable at the extinction of the last survivor of two Assigned Lives, according to the combined experience of various Life Offices, reckoning Interest at 3 per Cent.

Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.	Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.
Older.	Younger.				Older.	Younger.			
35	15	0 19 7	.00977	.25135	**41**	36	1 12 4	.01615	.35670
	20	1 1 6	.01076	.26984		41	1 15 8	.01784	.37997
	25	1 3 8	.01185	.28927					
	30	1 6 1	.01304	.30928	**42**	12	0 19 10	.00992	.25421
	35	1 8 7	.01429	.32917		17	1 1 11	.01095	.27331
						22	1 4 3	.01214	.29432
36	11	0 18 4	.00917	.23961		27	1 7 0	.01352	.31712
	16	1 0 2	.01007	.25706		32	1 10 2	.01507	.34101
	21	1 2 3	.01111	.27610		37	1 13 6	.01676	.36529
	26	1 4 6	.01225	.29615		42	1 17 1	.01855	.38914
	31	1 7 0	.01350	.31673					
	36	1 9 7	.01481	.33716	**43**	13	1 0 5	.01021	.25968
						18	1 2 7	.01129	.27941
37	12	0 18 11	.00944	.24489		23	1 5 1	.01254	.30107
	17	1 0 9	.01038	.26288		28	1 8 0	.01399	.32457
	22	1 2 11	.01147	.28252		33	1 11 3	.01562	.34916
	27	1 5 4	.01267	.30316		38	1 14 10	.01741	.37411
	32	1 7 11	01398	.32431		43	1 18 7	.01929	.39855
	37	1 10 9	.01536	.34528					
					44	14	1 1 0	.01051	.26533
38	13	0 19 5	.00972	.25031		19	1 3 3	.01164	.28567
	18	1 1 5	.01071	.26889		24	1 5 11	.01296	.30800
	23	1 3 8	.01184	.28913		29	1 9 0	.01448	.33221
	28	1 6 3	.01311	.31039		34	1 12 5	.01620	.35748
	33	1 9 0	.01448	.33215		39	1 16 2	.01809	.38314
	38	1 11 10	.01593	.35367		44	2 0 2	.02009	.40825
39	14	1 0 0	.01001	.25583	**45**	10	0 19 8	.00983	.25234
	19	1 2 1	.01104	.27500		15	1 1 8	.01083	.27107
	24	1 4 6	.01223	.29586		20	1 4 0	.01201	.29204
	29	1 7 1	.01356	.31775		25	1 6 9	.01339	.31505
	34	1 10 0	.01500	.34010		30	1 10 0	.01500	.33998
	39	1 13 1	.01654	.36220		35	1 13 8	.01681	.36599
						40	1 17 7	.01880	.39237
40	10	0 18 9	.00938	.24360		45	2 1 10	.02092	.41807
	15	1 0 8	.01031	.26153					
	20	1 2 9	.01139	.28130	**46**	11	1 0 2	.01010	.25761
	25	1 5 3	.01264	.30276		16	1 2 4	.01115	.27695
	30	1 8 1	.01404	.32529		21	1 4 9	.01239	.29856
	35	1 11 2	.01557	.34828		26	1 7 8	.01385	.32230
	40	1 14 4	.01718	.37097		31	1 11 1	.01554	.34796
						36	1 14 11	.01745	.37472
41	11	0 19 4	.00965	.24885		41	1 19 1	.01956	.40185
	16	1 1 3	.01062	.26736		46	2 3 7	.02180	42812
	21	1 3 6	.01176	.28772					
	26	1 6 2	.01308	.30986	**47**	12	1 0 9	.01039	.26296
	31	1 9 1	.01454	.33308		17	1 3 0	.01149	.28293

TABLE XVII.

LIFE ASSURANCES—LAST SURVIVOR.

Shewing the Single and Annual Premium required to secure a Sum payable at the extinction of the last survivor of two Assigned Lives according to the combined experience of various Life Offices, reckoning Interest at 3 per Cent.

Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.	Age.		Annual Premium per Cent.	Annual Prem. per £1.	Single Prem. per £1.
Older.	Younger.				Older.	Younger.			
47	22	1 5 7	.01279	.30522	**52**	22	1 6 9	.01338	.31484
	27	1 8 8	.01432	.32969		27	1 10 1	.01505	.34074
	32	1 12 2	.01610	.35609		32	1 14 1	.01704	.36910
	37	1 16 3	.01812	.38363		37	1 18 9	.01937	.39952
	42	2 0 9	.02036	.41149		42	2 4 2	.02208	.43121
	47	2 5 6	.02273	.43834		47	2 10 2	.02508	.46269
						52	2 16 6	.02822	.49211
48	13	1 1 4	.01068	.26845					
	18	1 3 8	.01184	.28907	**53**	13	1 2 3	.01112	.27632
	23	1 6 5	.01321	.31205		18	1 4 8	.01233	.29758
	28	1 9 8	.01482	.33727		23	1 7 7	.01380	.32160
	33	1 13 5	.01670	.36444		28	1 11 1	.01556	.34828
	38	1 17 8	.01884	.39279		33	1 15 4	.01766	.37748
	43	2 2 5	.02120	.42136		38	2 0 3	.02013	.40878
	48	2 7 5	.02371	.44879		43	2 6 0	.02300	.44131
						48	2 12 5	.02619	.47346
49	14	1 2 0	.01099	.27404		53	2 19 0	.02951	.50331
	19	1 4 5	.01220	.29533					
	24	1 7 3	.01364	.31900	**54**	14	1 2 10	.01141	.28182
	29	1 10 8	.01534	.34499		19	1 5 5	.01270	.30374
	34	1 14 8	.01732	.37292		24	1 8 6	.01424	.32849
	39	1 19 2	.01958	.40208		29	1 12 2	.01609	.35597
	44	2 4 2	.02210	.43144		34	1 16 8	.01831	.38602
	49	2 9 6	.02474	.45936		39	2 1 10	.02093	.41819
						44	2 7 11	.02398	.45162
50	10	1 0 6	.01025	.26040		49	2 14 9	.02736	.48439
	15	1 2 7	.01131	.27976		54	3 1 9	.03088	.51463
	20	1 5 2	.01258	.30170					
	25	1 8 2	.01409	.32609	**55**	10	1 1 3	.01064	.26763
	30	1 11 9	.01587	.35283		15	1 3 6	.01174	.28743
	35	1 15 11	.01797	.38157		20	1 6 2	.01308	.31007
	40	2 0 9	.02038	.41157		25	1 9 5	.01470	.33552
	45	2 6 1	.02303	.44166		30	1 13 4	.01665	.36380
	50	2 11 8	.02583	.47008		35	1 18 0	.01900	.39474
						40	2 3 6	.02177	.42783
51	11	1 1 1	.01053	.26562		45	2 10 0	.02502	.46207
	16	1 3 3	.01164	.28558		50	2 17 2	.02859	.49542
	21	1 5 11	.01297	.30820		55	3 4 8	.03233	.52612
	26	1 9 1	.01456	.33334					
	31	1 12 11	.01644	.36089	**56**	11	1 1 10	.01092	.27273
	36	1 17 4	.01865	.39046		16	1 4 2	.01208	.29315
	41	2 2 5	.02120	.42130		21	1 6 11	.01348	.31647
	46	2 8 1	.02403	.45208		26	1 10 4	.01518	.34272
	51	2 14 0	.02699	.48101		31	1 14 6	.01723	.37181
						36	1 19 5	.01971	.40364
52	12	1 1 8	.01082	.27092		41	2 5 4	.02266	.43764
	17	1 4 0	.01198	.29151		46	2 12 3	.02611	.47270

TABLE XVII.

LIFE ~~ANNUITIES~~—LAST SURVIVOR.

Shewing the Single and Annual Premiums required to secure a Sum payable at the extinction of the Last survivor of Two Assigned Lives according to the combined experience of various Life Offices, reckoning Interest at 3 per Cent.

Age.		Annual Premium per Cent.	Annual Prem. for £1.	Single Prem. for £1.	Age.		Annual Premium per Cent.	Annual Prem. for £1.	Single Prem. for £1.
Older.	Younger.				Older.	Younger.			
56	51	2 19 10	.02991	.50664	**61**	16	1 4 11	.01246	.29962
	56	3 7 9	.03387	.53771		21	1 7 10	.01392	.32344
						26	1 10 5	.01571	.35043
57	12	1 2 5	.01121	.27792		31	1 15 10	.01790	.38072
	17	1 4 10	.01242	.29897		36	2 1 2	.02060	.41425
	22	1 7 9	.01389	.32300		41	2 7 10	.02390	.45082
	27	1 11 4	.01568	.35003		46	2 15 10	.02792	.48949
	32	1 15 8	.01784	.37997		51	3 5 2	.03259	.52807
	37	2 0 11	.02046	.41270		56	3 15 6	.03776	.56454
	42	2 7 2	.02360	.44762		61	4 6 4	.04317	.59713
	47	2 14 6	.02726	.48349					
	52	3 2 7	.03130	.51800	**62**	12	1 3 1	.01153	.28377
	57	3 11 0	.03551	.54942		17	1 5 7	.01279	.30528
						22	1 8 8	.01433	.32984
58	13	1 3 0	.01150	.28319		27	1 12 5	.01621	.35762
	18	1 5 6	.01277	.30490		32	1 17 0	.01852	.38877
	23	1 8 8	.01432	.32966		37	2 2 9	.02136	.42325
	28	1 12 5	.01620	.35748		42	2 9 9	.02489	.46082
	33	1 16 11	.01848	.38829		47	2 18 4	.02916	.50034
	38	2 2 6	.02126	.42198		52	3 8 3	.03412	.53955
	43	2 9 2	.02458	.45782		57	3 19 3	.03962	.57643
	48	2 16 11	.02848	.49443		62	4 10 10	.04540	.60922
	53	2 5 6	.03277	.52946					
	58	3 14 6	.03725	.56121	**63**	13	1 3 8	.01183	.28887
						18	1 6 4	.01315	.31105
59	14	1 3 7	.01181	.28858		23	1 9 6	.01476	.33635
	19	1 6 3	.01314	.31100		28	1 13 6	.01673	.36490
	24	1 9 6	.01477	.33649		33	1 18 4	.01917	.39694
	29	1 13 8	.01675	.36512		38	2 4 4	.02217	.43240
	34	1 18 4	.01916	.39681		43	2 11 10	.02592	.47095
	39	2 4 2	.02209	.43141		48	3 0 11	.03047	.51133
	44	2 11 3	.02564	.46825		53	3 11 6	.03575	.55108
	49	2 19 6	.02977	.50553		58	4 3 3	.04162	.58831
	54	3 8 8	.03433	.54105		63	4 15 6	.04777	.62124
	59	3 18 2	.03910	.57316					
					64	14	1 4 3	.01213	.29409
60	10	1 1 11	.01098	.27381		19	1 7 0	.01351	.31693
	15	1 4 3	.01213	.29406		24	1 10 5	.01520	.34295
	20	1 7 1	.01352	.31717		29	1 14 7	.01728	.37237
	25	1 10 6	.01523	.34339		34	1 19 8	.01984	.40528
	30	1 14 8	.01731	.37283		39	2 6 1	.02304	.44172
	35	1 19 9	.01986	.40542		44	2 14 0	.02702	.48133
	40	2 6 0	.02298	.44102		49	3 3 9	.03185	.52239
	45	2 13 6	.02676	.47879		54	3 14 11	.03747	.56270
	50	3 2 3	.03114	.51671		59	4 7 6	.04375	.60034
	55	3 12 0	.03598	.55274		64	5 0 7	.05030	.63334
	60	4 2 2	.04107	.58511					
					65	10	1 2 6	.01126	.27888
61	11	1 2 6	.01125	.27873		15	1 14 11	.01245	.29940

TABLE XVII.

LIFE ANNUITIES—LAST SURVIVOR.

Shewing the Single and Annual Premiums required to secure a Sum payable at the extinction of the last Survivor of two Assigned Lives according to the combined experience of various Life Offices, reckoning Interest at 3 per Cent.

Age.		Annual Premium per Cent.	Annual Prem. for £1.	Single Prem. for £1.	Age.		Annual Premium per Cent.	Annual Prem. for £1.	Single Prem. for £1.
Older.	Younger.				Older.	Younger.			
65	20	1 7 9	.01389	.32295	**68**	18	1 6 11	.01344	.31583
	25	1 11 4	.01566	.34971		23	1 10 2	.01510	.34153
	30	1 15 8	.01785	.37994		28	1 14 3	.01714	.37068
	35	2 1 1	.02055	.41376		33	1 19 5	.01970	.40350
	40	2 7 11	.02395	.45124		38	2 5 10	.02291	.44024
	45	2 16 4	.02818	.49182		43	2 13 11	.02697	.48078
	50	3 6 7	.03331	.53357		48	3 4 2	.03207	.52405
	55	3 18 7	.03931	.57442		53	3 16 6	.03824	.56772
	60	4 12 0	.04600	.61233		58	4 11 0	.04552	.60983
	65	5 6 0	.05300	.64537		63	5 7 5	.05369	.64830
						68	6 4 5	.06219	.68107
66	11	1 3 1	.01153	.28363					
	16	1 5 6	.01276	.30476	**69**	14	1 4 9	.01239	.29839
	21	1 8 7	.01428	.32903		19	1 7 7	.01380	.32154
	26	1 12 3	.01613	.35655		24	1 11 3	.01554	.34796
	31	1 16 10	.01843	.38764		29	1 15 5	.01769	.37792
	36	2 2 7	.02130	.42244		34	2 0 9	.02037	.41163
	41	2 9 10	.02490	.46091		39	2 7 6	.02377	.44937
	46	2 18 10	.02941	.50244		44	2 16 2	.02809	.49102
	51	3 9 9	.03487	.54489		49	3 7 0	.03351	.53503
	56	4 2 6	.04127	.58619		54	4 0 2	.04009	.57926
	61	4 16 10	.04840	.62434		59	4 15 9	.04787	.62172
	66	5 11 9	.05587	.65733		64	5 13 2	.05660	.66024
						69	6 11 5	.06569	.69282
67	12	1 3 7	.01180	.28846					
	17	1 6 2	.01310	.31027	**70**	10	1 3 0	.01149	.28281
	22	1 9 4	.01468	.33523		15	1 5 5	.01269	.30351
	27	1 13 3	.01665	.36356		20	1 8 4	.01417	.32736
	32	1 18 1	.01905	.39549		25	1 12 0	.01599	.35448
	37	2 4 2	.02208	.43124		30	1 16 6	.01825	.38527
	42	2 11 10	.02591	.47078		35	2 2 2	.02109	.41994
	47	3 1 5	.03070	.51322		40	2 9 4	.02468	.45869
	52	3 13 0	.03651	.55630		45	2 18 7	.02928	.50137
	57	4 6 8	.04332	.59800		50	3 10 1	.03503	.54607
	62	5 1 11	.05097	.63636		55	4 4 1	.04205	.59082
	67	5 17 11	.05894	.66929		60	5 0 9	.05036	.63357
						65	5 19 5	.05973	.67210
68	13	1 4 2	.01209	.29335		70	6 18 10	.06942	.70444

TABLE XVIII.

VALUATION OF POLICIES—PREPARATORY TABLE.

3 per Cent. Annuities—Table 12—Single Lives—Interpolated for Months.

Age.	0	1	2	3	4	5	6	7	8	9	10	11	12
10	23.356	23.428	23.500	23.572	23.644	23.716	23.788	23.860	23.932	24.004	24.076	24.148	24.220
11	23.220	23.292	23.363	23.435	23.507	23.579	23.650	23.722	23.794	23.865	23.937	24.009	24.080
12	23.080	23.151	23.223	23.294	23.365	23.437	23.508	23.579	23.650	23.722	23.793	23.864	23.936
13	22.936	23.007	23.078	23.149	23.220	23.291	23.361	23.432	23.503	23.574	23.645	23.716	23.787
14	22.787	22 858	22.928	22.999	23.069	23.140	23.210	23.281	23.351	23.422	23.492	23.563	23.633
15	22.633	22 703	22.773	22.844	22.914	22.984	23.054	23.124	23.195	23.265	23.335	23.405	23.475
16	22.475	22.545	22.615	22.684	22.754	22.825	22.895	22.965	23.034	23.104	23.174	23.244	23.313
17	22.313	22.382	22.452	22.521	22.591	22.660	22.729	22.799	22.868	22.938	23.007	23.076	23.146
18	22.146	22.215	22.284	22.353	22.422	22.491	22.560	22.629	22.698	22.767	22.836	22.905	22.974
19	21.974	22.043	22.111	22.180	22.248	22.317	22.386	22.454	22.523	22.591	22.660	22.729	22.797
20	21.797	21.865	21.934	22.002	22.070	22.138	22.207	22.275	22.343	22.411	22.480	22.548	22.616
21	21.616	21.684	21.752	21.819	21.887	21.955	22.023	22.091	22.158	22.226	22.294	22.362	22.430
22	21.430	21.497	21.565	21.632	21.700	21.767	21.834	21.902	21.969	22.037	22.104	22.171	22.239
23	21.239	21.306	21.373	21.440	21.507	21.574	21.641	21.708	21.775	21.842	21.909	21.976	22.043
24	21.043	21.110	21.176	21.243	21.309	21.376	21.443	21.509	21.576	21.642	21.709	21.776	21.842
25	20.842	20.908	20.974	21.040	21.106	21.173	21.239	21.305	21.371	21.437	21.503	21.569	21.635
26	20.635	20.701	20.766	20.832	20.898	20.964	21.029	21.095	21.161	21.226	21.292	21.358	21.423
27	20.423	20.488	20.553	20.619	20.684	20.749	20.814	20.879	20.945	21.010	21.075	21.140	21.205
28	20.205	20.270	20.335	20.399	20.464	20.529	20.594	20.658	20.723	20.788	20.853	20.917	20.982
29	19.982	20.046	20.111	20.175	20.239	20.304	20.368	20.432	20.496	20.561	20.625	20.689	20.754

TABLE XVIII.—(Continued.)

VALUATION OF POLICIES—PREPARATORY TABLE.

3 per Cent. Annuities—Table 12—Single Lives—Interpolated for Months.

Age.	0	1	2	3	4	5	6	7	8	9	10	11	12
30	19.754	19.818	19.882	19.945	20.009	20.073	20.137	20.200	20.264	20.328	20.392	20.455	20.519
31	19.519	19.582	19.646	19.709	19.772	19.836	19.899	19.962	20.025	20.089	20.152	20.215	20.279
32	19.279	19.342	19.405	19.467	19.530	19.593	19.656	19.718	19.781	19.844	19.907	19.969	20.032
33	19.032	19.095	19.158	19.220	19.282	19.345	19.407	19.469	19.531	19.594	19.656	19.718	19.780
34	18.780	18.842	18.904	18.965	19.027	19.089	19.151	19.213	19.274	19.336	19.398	19.460	19.521
35	18.521	18.582	18.643	18.705	18.766	18.827	18.888	18.949	19.011	19.072	19.133	19.194	19.255
36	18.255	18.316	18.376	18.437	18.498	18.559	18.619	18.680	18.741	18.801	18.862	18.923	18.983
37	17.983	18.043	18.103	18.163	18.223	18.283	18.343	18.403	18.463	18.523	18.583	18.643	18.703
38	17.703	17.763	17.822	17.882	17.941	18.001	18.060	18.120	18.179	18.239	18.298	18.358	18.417
39	17.417	17.476	17.535	17.593	17.652	17.711	17.770	17.829	17.887	17.946	18.005	18.064	18.123
40	17.123	17.181	17.239	17.298	17.356	17.414	17.472	17.530	17.589	17.647	17.705	17.764	17.821
41	16.821	16.879	16.936	16.994	17.051	17.109	17.167	17.224	17.282	17.339	17.397	17.455	17.512
42	16.512	16.569	16.626	16.683	16.740	16.797	16.853	16.910	16.967	17.024	17.081	17.138	17.195
43	16.195	16.251	16.308	16.364	16.420	16.477	16.533	16.589	16.645	16.702	16.758	16.814	16.870
44	15.870	15.926	15.982	16.037	16.093	16.149	16.205	16.261	16.316	16.372	16.428	16.484	16.540
45	15.540	15.595	15.651	15.706	15.761	15.817	15.872	15.927	15.982	16.038	16.093	16.148	16.204
46	15.204	15.259	15.314	15.369	15.424	15.479	15.534	15.589	15.644	15.699	15.754	15.809	15.864
47	14.864	14.919	14.973	15.028	15.082	15.137	15.192	15.246	15.301	15.355	15.410	15.465	15.519
48	14.519	14.573	14.628	14.682	14.736	14.791	14.845	14.899	14.953	15.008	15.062	15.116	15.171
49	14.171	14.225	14.279	14.333	14.387	14.442	14.496	14.550	14.604	14.658	14.712	14.766	14.820

TABLE XVIII.—(Continued.)

VALUATION OF POLICIES—PREPARATORY TABLE.

3 per Cent. Annuities—Table 12—Single Lives—Interpolated for Months.

Age.	0	1	2	3	4	5	6	7	8	9	10	11	12
50	13.820	13.873	13.928	13.981	14.035	14.089	14.143	14.197	14.250	14.304	14.358	14.412	14.465
51	13.465	13.519	13.572	13.626	13.679	13.733	13.785	13.840	13.893	13.947	14.000	14.054	14.107
52	13.107	13.160	13.214	13.267	13.320	13.374	13.427	13.480	13.533	13.587	13.640	13.693	13.747
53	12.747	12.800	12.853	12.907	12.960	13.013	13.066	13.119	13.173	13.226	13.279	13.332	13.385
54	12.385	12.438	12.491	12.544	12.597	12.650	12.703	12.756	12.809	12.862	12.915	12.968	13.021
55	12.021	12.074	12.127	12.180	12.233	12.286	12.338	12.391	12.444	12.497	12.550	12.603	12.656
56	11.656	11.709	11.762	11.814	11.867	11.920	11.973	12.026	12.078	12.131	12.184	12.237	12.290
57	11.290	11.343	11.396	11.448	11.501	11.554	11.607	11.660	11.712	11.765	11.818	11.871	11.923
58	10.923	10.976	11.028	11.081	11.134	11.187	11.239	11.292	11.345	11.397	11.450	11.503	11.555
59	10.555	10.608	10.661	10.713	10.766	10.819	10.872	10.925	10.977	11.030	11.083	11.136	11.188
60	10.188	10.241	10.294	10.346	10.399	10.452	10.505	10.558	10.610	10.663	10.716	10.769	10.822
61	9.822	9.875	9.928	9.981	10.034	10.087	10.139	10.192	10.245	10.298	10.351	10.404	10.457
62	9.457	9.510	9.564	9.617	9.670	9.724	9.777	9.830	9.883	9.937	9.990	10.043	10.096
63	9.096	9.150	9.204	9.257	9 310	9.364	9.417	9.470	9.523	9.577	9.630	9.683	9.737
64	8.737	8.791	8.845	8.898	8.952	9.006	9.060	9.114	9.167	9.221	9.275	9.329	9.382
65	8.382	8.436	8.490	8.545	8.599	8.653	8.707	8.761	8.816	8.870	8.924	8.978	9.032
66	8.032	8.087	8.141	8.196	8.250	8.305	8.359	8.414	8.468	8.523	8.577	8.632	8.686
67	7.686	7.741	7.796	7.851	7.906	7.962	8.017	8.072	8.127	8.182	8.237	8.292	8.347
68	7.347	7.403	7.458	7.514	7.569	7.625	7.680	7.736	7.791	7.847	7.902	7.958	8.013
69	7.013	7.069	7.125	7.181	7.237	7.293	7.349	7.405	7.461	7.517	7.573	7.629	7.685
70	6.685	6.742	6.798	6.855	6.911	6.968	7.025	7.081	7.138	7.194	7.251	7.308	7.364

TABLE XIX.

VALUATION OF POLICIES—PREPARATORY TABLE.

3 per Cent. Single Premiums—Table 15—Interpolated for Months.

Age.	0	1	2	3	4	5	6	7	8	9	10	11
10	.29061	.29094	.29127	.29160	.29193	.29226	.29258	.29291	.29324	.29357	.29390	.29425
11	.29456	.29490	.29524	.29558	.29592	.29626	.29659	.29693	.29727	.29761	.29795	.29829
12	.29863	.29898	.29933	.29968	.30003	.30039	.30974	.30109	.30144	.30179	.30214	.30249
13	.30284	.30320	.30356	.30393	.30429	.30465	.30501	.30537	.30574	.30610	.30646	.30682
14	.30718	.30755	.30792	.30830	.30867	.30904	.31942	.30979	.31016	.31053	.31091	.31128
15	.31165	.31203	.31241	.31280	.31318	.31356	.31395	.31433	.31471	.31510	.31548	.31586
16	.31625	.31665	.31704	.31744	.31783	.31823	.31862	.31902	.31941	.31981	.32020	.32060
17	.32099	.32140	.32180	.32221	.32261	.32302	.32342	.32383	.32423	.32464	.32504	.32545
18	.32585	.32627	.32669	.32710	.32752	.32794	.32836	.32877	.32919	.32961	.33003	.33044
19	.33086	.33129	.33172	.33214	.33257	.33300	.33343	.33386	.33428	.33471	.33514	.33557
20	.33600	.33644	.33688	.33732	.33776	.33820	.33864	.33908	.33952	.33996	.34040	.34084
21	.34128	.34173	.34218	.34263	.34308	.34354	.34399	.34444	.34489	.34534	.34579	.34624
22	.34669	.34715	.34761	.34808	.34855	.34901	.34947	.34994	.35040	.35087	.35133	.35179
23	.35226	.35274	.35321	.35369	.35416	.35464	.35512	.35559	.35607	.35654	.35702	.35750
24	.35797	.35846	.35895	.35943	.35992	.36041	.36090	.36139	.36187	.36236	.36285	.36334
25	.36383	.36433	.36483	.36534	.36584	.36634	.36684	.36734	.36785	.36835	.36885	.36935
26	.36985	.37037	.37088	.37140	.37191	.37243	.37294	.37346	.37397	.37449	.37500	.37552
27	.37603	.37656	.37709	.37761	.37814	.37867	.37920	.37972	.38025	.38078	.38131	.38183
28	.38236	.38290	.38344	.38399	.38453	.38507	.38561	.38615	.38670	.38724	.38778	.38832
29	.38886	.28942	.38997	.39053	.39108	.39164	.32219	.39275	.39330	.39386	.39441	.39497

TABLE XIX.—(Continued.)

VALUATION OF POLICIES—PREPARATORY TABLE.

3 per Cent. Single Premiums—Table 15—Interpolated for Months.

Age.	0	1	2	3	4	5	6	7	8	9	10	11
30	.39552	.39609	.39666	.39723	.39780	.39837	.39893	.39950	.40007	.40064	.40121	.40178
31	.40235	.40293	.40352	.40410	.40469	.40527	.40585	.40644	.40702	.40761	.40819	.40877
32	.40936	.40996	.41056	.41115	.41175	.41235	.41295	.41355	.41414	.41474	.41534	.41594
33	.41654	.41715	.41777	.41838	.41899	.41960	.42022	.42083	.42144	.42205	.42267	.42328
34	.42389	.42452	.42515	.42578	.42641	.42704	.42766	.42829	.42892	.42955	.43018	.43081
35	.43144	.43208	.43273	.43337	.43402	.43466	.43530	.43595	.43659	.43724	.43788	.43852
36	.43917	.43983	.44049	.44115	.44181	.44248	.44314	.44380	.44446	.44512	.44578	.44644
37	.44710	.44778	.44846	.44913	.44981	.45049	.45117	.45185	.45252	.45320	.45388	.45456
38	.45524	.45593	.45663	.45733	.45802	.45872	.45941	.46011	.46080	.46150	.46219	.46289
39	.46358	.46429	.46501	.46572	.46643	.46715	.46786	.46857	.46928	.47000	.47071	.47142
40	.47214	.47287	.47361	.47434	.47507	.47581	.47654	.47727	.47800	.47874	.47947	.48020
41	.48093	.48168	.48243	.48319	.48394	.48469	.48544	.48619	.48695	.48770	.48845	.48920
42	.48995	.49072	.49149	.49226	.49303	.49380	.49457	.49534	.49611	.49688	.49765	.49842
43	.49919	.49998	.50076	.50155	.50234	.50313	.50392	.50470	.50549	.50627	.50706	.50784
44	.50863	.50943	.51024	.51104	.51184	.51265	.51345	.51425	.51505	.51586	.51666	.51746
45	.51826	.51908	.51989	.52071	.52152	.52234	.52315	.52397	.52478	.52560	.52641	.52723
46	.52804	.52887	.52969	.53052	.53134	.53217	.53300	.53382	.53465	.53547	.53630	.53713
47	.53795	.53879	.53962	.54046	.54129	.54213	.54297	.54380	.54464	.54547	.54631	.54715
48	.54798	.54883	.54967	.55052	.55136	.55221	.55305	.55390	.55474	.55559	.55643	.55728
49	.55812	.55897	.55983	.56068	.56153	.56239	.56324	.56409	.56494	.56580	.56664	.56750

TABLE XIX.—(Continued.)

VALUATION OF POLICIES—PREPARATORY TABLE.

3 per Cent. Single Premiums—Table 15—Interpolated for Months.

Age.	0	1	2	3	4	5	6	7	8	9	10	11
50	.56836	.56922	.57008	.57095	.57181	.57267	.57353	.57439	.57526	.57612	.57698	.57784
51	.57870	.57957	.58044	.58130	.58217	.58304	.58391	.58478	.58564	.58651	.58738	.58825
52	.58912	.58999	.59087	.59174	.59261	.59349	.59436	.59523	.59610	.59698	.59785	.59872
53	.59960	.60048	.60136	.60224	.60312	.60400	.60488	.60575	.60663	.60751	.60839	.60927
54	.61015	.61103	.61192	.61280	.61368	.61457	.61545	.61633	.61721	.61810	.61898	.61986
55	.62075	.62163	.62252	.62341	.62430	.62519	.62607	.62696	.62785	.62873	.62962	.63051
56	.63139	.63228	.63317	.63405	.63494	.63583	.63672	.63761	.63849	.63938	.64027	.64116
57	.64205	.64294	.64383	.64472	.64561	.64651	.64740	.64829	.64918	.65007	.65096	.65185
58	.65274	.65363	.65452	.65542	.65631	.65720	.65809	.65898	.65988	.66077	.66166	.66255
59	.66344	.66433	.66522	.66612	.66701	.66790	.66879	.66968	.67058	.67147	.67236	.67325
60	.67414	.67503	.67592	.67680	.67769	.67857	.67946	.68035	.68123	.68212	.68301	.68390
61	.68480	.68568	.68657	.68745	.68834	.68922	.69010	.69099	.69187	.69275	.69364	.69452
62	.69541	.69629	.69717	.69804	.69892	.69980	.70068	.70156	.70243	.70331	.70419	.70507
63	.70595	.70682	.70769	.70856	.70943	.71031	.71118	.71205	.71292	.71379	.71466	.71553
64	.71640	.71726	.71812	.71898	.71984	.72071	.72157	.72243	.72329	.72415	.72501	.72587
65	.72673	.72758	.72843	.72928	.73013	.73099	.73184	.73269	.73354	.73439	.73524	.73609
66	.73694	.73778	.73862	.73945	.74029	.74113	.74197	.74281	.74364	.74448	.74532	.74616
67	.74700	.74782	.74865	.74947	.75030	.75112	.75194	.75277	.75359	.75442	.75524	.75606
68	.75689	.75770	.75851	.75932	.76013	.76095	.76176	.76257	.76338	.76419	.76500	.76581
69	.76662	.76742	.76821	.76901	.76980	.77060	.77140	.77219	.77299	.77378	.77458	.77538
70	.77617	.77695	.77773	.77851	.77929	.78007	.78085	.78163	.78241	.78319	.78397	.78475

LEGAL DECISIONS

ON

LIFE ASSURANCE:

A DIGEST OF

ALL THE REPORTED CASES,

CHRONOLOGICALLY ARRANGED.

Ross *versus* Bradshaw.

Trinity Term, 1761.

Concealment of circumstances on a life insurance is not so fatal if the life be warranted good, as if it be a common insurance. "Where there is a warranty, then nothing need be told; but it must in general be proved, if litigated, that the life was in fact a good one, and so it may be though he have a particular infirmity. The only question is, whether he was in a reasonably good state of health, and such a life as ought to be insured on common terms."---Lord Mansfield. 1. *W. Black.* 312. *See also on this point, Willis* versus *Poole.* 2 *Park on Ins.* 935.

Stackpole *versus* Simon.

Hilary Vac. 1779.

Where a Broker, who effected an insurance, told the Underwriters that the person for whom he acted would not warrant, but he believed the party to be a good life, Held, that the Underwriters were liable. 2 *Park on Ins.* 932.

Patterson *versus* Black.

Hilary Vac. 1780.

Where an insurance is made upon the life of a man who goes to sea, and the ship in which he sailed is never afterwards heard of, the question

whether he did or did not die within the term insured, is a fact for the Jury to ascertain from the circumstances which shall be produced in evidence before them. 2 *Park on Ins.* 920.

LOCKYER *versus* OFFLEY.

26*th May*, 1786.

On an Insurance on a man's life for a year, if, some short time before the expiration of the term, he receives a mortal wound, of which he dies after the year, the insurer will not be liable.—1. T. R. 260.—*A supposed case by Willes, J.*

DWYER *versus* EDIE.

Hilary Term, 1788.

The holder of a note given for money won at play, has not an insurable interest in the life of the maker of the note. 2 *Park on Ins.* 914.

TIDSWELL *versus* ANKERSTEIN.

18*th July*, 1792.

An executor in trust has a sufficient interest to enable him to make assurance in his own name, on the life of a person who has granted an annuity to the testator. *Peake's N. P.* 204.

ANDERSON *versus* EDIE.

Trinity Term, 1795.

A bona fide creditor has such an interest in his debtor's life, that he may insure it and recover upon the policy. 2 *Park on Ins.* 915.

AVESON *versus* LORD KINNAIRD, AND OTHERS.

6*th Feb.* 1805.

In an action by the husband upon a policy of insurance on the life of his wife, declarations by his wife, made by her when lying in bed, apparently ill, stating the bad state of her health at the period of her going to M. (whither she went a few days before in order to be examined by a surgeon, and to get a certificate from him of good health, preparatory to making the insurance) down to that time, and her apprehensions that she could not live ten days longer, by which time the policy was to be returned, are admissible in evidence to shew her own opinion, who best knew the fact of the ill state of her health at the time of effecting the policy, which was on a day intervening between the

time of her going to M. and the day on which such declarations were made; and particularly after the plaintiff had called the surgeon as a witness to prove that she was in a good state of health when examined by him at M., this judgment being formed, in part, from the satisfactory answers given by her to his enquiries. 6 *East*, 188.

HOLLAND, *Executor of O'Hara, versus* SMITH, *Executor of Kendrick.*

4*th March*, 1806.

Where a policy of insurance has been effected on the life of a debtor, as a security to the lender of money, and the lender charges the premiums to the account of the debtor, who pays them, if the principal is afterwards paid, the debtor, or his representative, is entitled to the policy. 6 *Esp.* 11.

GODSALL *and others, versus* BOLDERO *and others, Directors of the Pelican Life Insurance Company.*

25*th Nov.* 1807.

A Creditor may insure the life of his Debtor to the extent of his debt; but such a contract is substantially a contract of indemnity against the loss of the debt; and therefore, if, after the death of the debtor, his executors pay the debt to the insuring creditor, the latter cannot afterwards recover upon the policy; although the debtor died insolvent, and the executors were furnished with the means of payment by a third party.—9 *East*, 72.

WANT *and others, versus* BLUNT *and others, Directors of a Life Assurance Society for the benefit of Widows and Female Relatives.*

12*th Feb.* 1810.

Where one, as a member of a Life Insurance Society for the benefit of widows and female relatives, entered into a Policy of Insurance with the society for a certain annuity to his widow after his death, in consideration of a quarterly premium to be paid to the Society during his life, and the Society covenanted with him and his executors, &c., that if he should pay to their clerk the quarterly premiums on the quarter-days during his life, and if he should also pay his proportion of contributions, which the members of the Society should, during his life, be called on to make, in order to supply any deficiences in their funds, then, on due proof of his death, the Society engaged to pay the annuity to his widow; and by the rules of the Society, if any member neglected to

pay up the quarterly premiums for fifteen days after they were due, the policy was declared to be void, unless the member (continuing in as good health as when the policy expired) pay up the arrears within six months, and five shillings per month extra:—Held, that a member insuring, having died, leaving a quarterly payment over-due at the time of his death, the policy expired; and that a tender of the sum by the member's executor, though made within fifteen days after it became due, did not satisfy the requisition of the policy and the rules of the Society which required such payment to be made by the member in his lifetime, continuing in as good health as when the policy expired.—12 *East*, 183.

WATSON *versus* MAINWARING *and others, Directors of the Equitable Insurance Office.*

6th May, 1813.

It is not to be concluded that a disorder with which a person is afflicted before he effects an insurance on his life is a "disorder tending to shorten life," within the meaning of the declaration required by the Equitable Insurance Office, from the mere circumstance that he afterwards dies of it, if it be not a disorder which generally has that tendency.—4 *Taunt.* 763.

HUGUENIN *versus* RAYLEY—*the Albion Insurance Company.*

6th May, 1815.

The conditions of a life insurance required a declaration of the state of the health of the assured, and the policy was to be valid only if the statement were to be free from all misrepresentation and reservation: the declaration described the assured as resident at Fisherton Anger; she was then a prisoner in the county gaol there:—Held, that it was a question for the Jury whether the imprisonment were a material fact, and ought to have been communicated.—6 *Taunt.*, 186.

HIGGINS *versus* SARGENT *and others:*

Nov. 1823.

Interest is not recoverable in an action of covenant upon a policy of Assurance upon the life of A., by which a certain sum was made payable six months after due proof of his death, although the money insured was not paid at the time stipulated for that purpose.—3 *D. & R.* 613. 2 *B. & C.* 348.

MAYNARD *versus* RHODES.

8*th Nov.* 1824.

Where an insurance was effected on the life of A. for the benefit of B., and the Insurance Office acted upon A.'s own representation as to the state of his health, and it turned out that he was not an insurable life:—Held, that B. could not maintain an action on the policy, although he was not privy to the representation. 5 *Dowl. and Ryl.* 266, 1 *C. and P.* 360.

MORRISON *versus* MUSTPRATT.

31*st January*, 1827.

A female upon whose life it was proposed to effect an insurance was represented to the insurers, in December, 1822, by A., a medical man, as enjoying, ordinarily, a good state of health. The same representation was repeated by A. in March, and the insurance was effected in April, 1823. Between December, 1822, and March, 1823, she had been ill with a pulmonary attack, and was attended by B.; but no disclosure of these circumstances was made to the insurers. In April, 1824, she died of a pulmonary disease:—Held, on motion for a new trial, that the Jury ought to have been called on to consider whether the illness in 1823, and the attendance of B., ought to have been disclosed to the insurers; and that it was not sufficient to direct them generally to consider whether or not there had been any misrepresentation.—4 *Bing.* 60. 12 *Moore*, 231.

BOLLAND *versus* DISNEY, *the Amicable Assurance Society.*

21*st May*, 1827.

In the policies effected by the Amicable Society, there is no exception as to death by the hands of justice. A person insuring his life in that office afterwards suffered death for a criminal offence, the policy was not thereby avoided. 3 *Russ.* 351. *But see The Amicable Society App. Bolland and others. Resp. page* 6.

LINDENAU *versus* DESBOROUGH, *Secretary to the Atlas Insurance Company.*

12*th Nov.* 1828.

If the assured, at the time of effecting the policy, conceals anything material for the plaintiff to know, the policy is void; and it matters not whether or not the assured considered it material or not; and what

amounts to a misrepresentation, or to a material concealment, is a question for the Jury; the fact that, on a life policy, an unusually high premium was paid, is quite immaterial, and therefore not to be taken as a proof that the Office considered the party to be a bad life.—3 *M. & R.*, 45. 8 *B. & C.* 586. 3 *C. & P.* 350.

EVERETT *versus* DESBOROUGH, *Secretary to the Atlas Insurance Company.*

27*th May*, 1829.

1.—In an insurance upon the life of another, the life insured, if applied to for information, is, in giving such information, impliedly the Agent of the party insuring, who is bound by his statements, and must suffer if they are false, although he is unacquainted with the life insured, and the servant of the Insurance Office undertakes to do all that is required by his Office. 2.—Plaintiff effected an insurance on the life of H, with whom he was unacquainted, desired the Agent of the Insurance Office to do all that was requisite. The Agent knew H well, and made the usual inquiries. One of the terms of the contract was, a reference to the usual Medical Attendant of the life insured. H. having given a false reference: Held, that the Plaintiff could not recover.—5 *Bing.* 503. *M. and P.* 190.

The AMICABLE SOCIETY *Appellants*, JAMES BOLLAND *and others, Respondents.*

1830.

H. F. assures his life in January, 1815, and pays premiums regulary till 1824. In June, 1815, H. F. commits a felony, of which he is convicted in October, 1824, and for which he is executed in Nov. 1824. Bill filed in 1825, by the representatives of H. F., claiming under him and in his right, for payment of the sum alleged to be due on the Insurance, and decree in favour of the representatives; but the judgment reversed by the Lords, on the ground, that, by the general policy of the law, the insurance became void as to those claiming under and in right of H. F., in consequence of the death being occasioned by his own criminal act. 2 *Dow and Clark*, 1. 4 *Bligh, N. S.* 194.

RICHARD HALFORD *versus* KYMER *and others, Directors of the Asylum Life Insurance Company.*

4*th May*, 1830.

The stat. 14 Geo. 3, c. 48, s. 1, enacts that no insurance shall be

made on lives, or any other event, wherein the person for whose benefit the policy shall be made shall have no interest; and that every such assurance shall be void: and by s. 3, it is enacted that in all cases where the insured hath interest in such life or event, no greater sum shall be recovered or received from the insurers than the amount or value of the interest of the insured in such life or other event. In order to render a policy valid within the meaning of this Act, the party for whose benefit it is effected must have a pecuniary interest in the life or event insured; and therefore a policy effected by a father on the life of his son, he not having any pecuniary interest therein, is void.—10 *B. and C.* 724.

J. G. S. LEFEVRE *and others, Trustees of the Promoter Life Assurance Company, versus* BOYLE.

13*th January*, 1832.

A policy was effected by A. upon her own life with an Insurance Company: it was by deed, executed by three Trustees of the Company: A. afterwards assigned it to B. and died. The money due on the policy was paid to B. by a check drawn by the Trustees on the Bankers of the Company, and he gave an acknowledgment of having received the money from the Trustees. By the deed of trust the Board of Directors were to cause all monies belonging to the Company to be deposited with the Bankers in the name of the Trustees, and such monies were not to be withdrawn but for the purposes of the Company, and by checks signed by the Trustees, or by three or more Directors under some authority to be given by the Trustees. After the payment to B. it was discovered that the policy was void on account of fraud:—Held, that, under the circumstances, the three Trustees were the proper plaintiffs in an action to recover back the money so paid to B.—3 *B. & Add.* 877.

SWETE *versus* FAIRLIE, *and another,—the Globe Insurance Office.*

28*th Feb*, 1833.

A policy of insurance on the life of another person, who, at the time of the insurance, is in a good state of health, is not vitiated by the non-communication by such person of the fact of his having, a few years before, been afflicted with a disorder tending to shorten life, if it appear that the disorder was of such a character as to prevent the party from being conscious of what had happened to him while suffering under it. 6 *C. and P.* 1.

DUCKETT—*the Provident Life Assurance Company—versus* WILLIAMS *—the Hope Insurance Company.*

Hilary Term, 1834.

Before effecting a policy of life insurance, a declaration and statement of health, and freedom from disease, &c., was signed by the assured. By one clause it was stipulated that "*if any untrue averment* was contained therein, or if *the facts* required to be set forth in the above proposal were *not truly stated*," the premiums were to be forfeited, and the assurance to be void. Held, that as the health, &c. of the party whose life was insured was untruly stated, though not to the knowledge of the party making the declaration and statement, the premiums, &c. were forfeited, and could not be recovered back. 2 *Cromp. and Mees.* 348 4 *Tyr.* 240.

WAINWRIGHT, *Executor of Abercromby, deceased, versus* BLAND *and others, three of the Directors of the Imperial Life Assurance Company.*

27*th June*, 1835.

A party, on insuring her life, made false representations as to her object in effecting the insurance, and also as to her having obtained similar insurances from other offices, both of which facts were found by the Jury at the trial to be material to be known by the Insurance Company.—Held, that the policy was thereby avoided, although such false representations were in answer to parol inquiries not comprised in the list of printed questions required by the regulations of the Office to be asked of the assured; and although the policy, as framed, was only to be void on false answers being given to such printed questions.—1 *Tyr. & Gr.* 417. 1 *Moody and Rob.* 481.

CHATTOCK *versus* SHAWE *and others, Directors of the Eagle Insurance Company.*

11*th July*, 1835.

Where a policy of insurance contains a warranty that the assured "has not been afflicted with, nor subject to, gout, vertigo, fits," &c. such warranty is not broken by the fact of the assured having had an epileptic fit in consequence of an accident. To vacate such policy it must be shown that the constitution of the assured was naturally *liable* to fits, or by accident or otherwise had become so *liable*.—1 *Moody & Rob.* 498.

HUCKMAN *versus* FERNIE, *Managing Director of the British Commercial Insurance Company.*

Easter Term, 1838.

In an action on a Policy of Insurance effected by the plaintiff on the life of his wife, the declaration averred that the plaintiff had made statements *(inter alia)* that the wife was not afflicted with any disorder which tended to shorten life, and that she had led, and continued to lead, a temperate life. The defendant pleaded, that before the making of the policy, and on divers times after that day, the wife had been, and was afflicted with certain disorders, maladies or diseases—to wit, delirium tremens and erysipelatous inflammation of the legs, *all which the plaintiff before, and at the time of making the policy, well knew.* It appeared that at the time the policy was effected, the wife had been examined at the Insurance Office, and answered several questions put to her, but did not apprise the Company of her having been affected with those complaints. The Jury found that the plaintiff had not any knowledge of her having had these disorders:—Held, that upon the issue raised on these pleadings, the wife not being the general agent of the husband to effect the policy, but only sent to answer particular questions, her knowledge was not in this respect the knowledge of the husband. The wife had for several years been attended by A. B. up to her marriage with the plaintiff, and nearly to the time the policy was effected. After her marriage C. D., the medical attender of her husband's family, prescribed for her for a cold, or some trifling matter. In answer to the question put to her at the Office, "who is your usual medical attendant," she replied, C. D.:—Held, that the learned Judge ought not to have left it to the Jury, on this evidence, to say which of the two was her usual medical attendant, but whether C. D. could be called her usual medical attendant at all. 3 *Meeson & Welsby*, 505.

RAWLINS, *a Director of the Eagle Insurance Company, versus* DESBOROUGH, *Secretary to the Atlas Assurance Company.*

26th Feb. 1840.

1. A party whose life is insured, is not the general agent for the assured: and therefore the policy is not void by reason that such party failed to communicate a material fact, as to which he was not interrogated by the insurers, unless he was aware of the materiality of the fact and

studiously concealed it. 2. It is a question of fact for the Jury whether a fact, not communicated, was, under the circumstances, one which the assured ought to have communicated.—2 *Moody & Rob.* 328.

CRAIG, Bart. *versus* FENN *and others—the Asylum Life Insurance Company.*

16*th Dec.* 1841.

In an action against an Insurance Office on a life policy, it is no objection to a Special Juror being sworn, that he is a director of another insurance office, unless that office has granted a policy on the life in question, and the amount of that policy be unpaid. 1 *Carr and Marsh* 43.

SOUTHCOMBE *versus* MERRIMAN, *and others, Directors of* ——— *Life Insurance Company.*

17*th March,* 1842.

In an action to recover the amount of a policy upon a life insurance, where the rules of the society stipulate that the insured shall be of sober and temperate habits, it is sufficient, on a plea denying the sober and temperate habits of the insured, for the defendants to shew that his habits were intemperate; and it is no answer to this plea, that the plaintiff prove the intemperance not to have been to such a degree as to injure the health of the insured, or to shorten his life. 1 *Carr and Mar.* 286.

Jones and Causton, Printers, 47, Eastcheap, London.